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EXPOSING SUPPLY CHAIN VULNERABILITIES TO ILLICIT TRADE

A GLOBAL REPORT ON DYNAMICS, HOTSPOTS AND RESPONSES ACROSS 10 SECTORS

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ABOUT TRACIT

The Transnational Alliance to Combat Illicit Trade (TRACIT) is an independent, private sector initiative to drive change to mitigate the economic and social damages of illicit trade by strengthening government enforcement mechanisms and mobilizing businesses across industry sectors most impacted by illicit trade. For more information, visit www.TRACIT.org

ACKNOWLEDGMENTS

TRACIT expresses its gratitude to its member companies and Alliance Partners for their invaluable contributions, including their support, resources, and feedback, as well as the information, case studies, and viewpoints they provided. We are also appreciative of the many experts from various private sector organizations who accepted to be interviewed for their insights and experiences.

This report was funded by PMI IMPACT, a grant award initiative of Philip Morris International (PMI). TRACIT maintained full independence from PMI during all phases of this work. As such, the views and opinions expressed in this document derive from the primary and secondary sources comprised in the report's findings and do not reflect input or views of PMI. For the record, and as per the terms of the grant agreement, neither PMI nor any of its affiliates nor person acting on their behalf may be held responsible for any use which may be made of the information contained herein.

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ABBREVIATIONS AND ACRONYMS

AAC	Administrative Assistance and Cooperation system network
AACS	Alliance against Counterfeit Spirits
ACE	Advisory Committee on Enforcement
ACIC	Criminal Intelligence Commission of Australia
ACN	EU Alert and Cooperation Network
AEO	Authorized Economic Operator
AFA	Application for Action
AIS	Automated Identification Systems
AITO	Anti-illicit Trade Operation
AML	Anti Money Laundering
ARMS	Automated Risk Management System
ASEAN	Association of Southeast Asian Nations
ASM	Artisanal and Small-scale Mining
ASOP	Alliance for Safe Online Pharmacies
ASPA	Authentication Solution Providers' Association
BASCAP	Business Action to Stop Counterfeiting and Piracy
BP	British Petroleum
CAC	Codex Alimentarius Commission
CAR	Central African Region
CCCMC	Chamber of Commerce of Metals, Minerals and Chemicals Importers & Exporters Container Control Program
CCP	Container Control Program
CEN	Customs Enforcement Network
CFIA	Canadian Food Inspection Agency
CGF	Consumer Goods Forum
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CoE	Council of Europe
COP	Code of Practices
CSIP	Center for Safe Internet Pharmacies
CTED	UN Counter Terrorism Executive Directorate
CTPAT	Customs Trade Partnership Against Terrorism
DART-TOFMS	Direct Analysis in Real Time Time-of-Flight Mass Spectrometry
DEA	US Drug Enforcement Administration
DHS	Department of Homeland Security
DNFBPs	Designated Non-Financial Businesses and Professions
DRC	Democratic Republic of Congo
EAD	Electronic Advance Data

ECOSOC	United Nations Economic and Social Council
EFSA	European Food Safety Authority
EMA	Economically Motivated Adulteration
EMS	Electronic Monitoring Systems
EPA	US Environmental Protection Agency
ESIA	European Semiconductor Industry Association
EU	European Union
EUIPO	EU Intellectual Property Office
EUTR	EU Timber Regulation
FAO	Food and Agricultural Organization
FATF	Financial Action Task Force
FBOs	Food Business Operators
FCTC	WHO's Framework Convention on Tobacco Control
FDA	US Food and Drug Administration
FFN	Agri-Food Fraud Network
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FLEGT	EU Forest Law Enforcement, Governance and Trade
FMCG	Fast Moving Consumer Goods
FSC	Forest Stewardship Council
FSMA	FDA Food Safety Modernization Act
FSMS	Food Safety Management Systems
FTZ	Free Trade Zones
GACG	Global Anti-Counterfeiting Group Network
GFSI	Global Food Safety Initiative
GLAA	UK Gangmasters and Labour Abuse Authority
GTIN	Global Trade Item Number
HACCP	Hazard Analysis Critical Control Point
HCVs	High Conservation Values
IACC	International Anti-Counterfeiting Coalition
IATA	International Air Transport Association
ICCWC	International Consortium on Combating Wildlife Crime
ICE	U.S. Immigration and Customs Enforcement
ICFPA	International Council of Forest and Paper Associations
IFS	International Featured Standards
IFSP	International Federation of Spirits Producers Ltd
IGOs	Inter-Governmental Organizations
IIED	International Institute for Environment and Development
IIPCIC	International IP Crime Investigators College

ILO	International Labour Organization
IMO	International Maritime Organization
IMPACT	International Medical Products Anti-Counterfeiting Taskforce
INTA	International Trademark Association
IPR	Intellectual Property Rights
ISO	International Standards Organization
ISPS	International Ship and Port Facility Security
ISS	Information Sharing System
IT	Information Technology
ITTP	Illicit Trade in Tobacco Products
ITW	Illegal Trade in Wildlife
IUFRO	International Union of Forest Research Organizations
IUU fishing	Illegal, Unreported and Unregulated fishing
JCO	Joint Customs Operation
JTI	Japan Tobacco International
KPCS	Kimberley Process Certification Scheme
KYC	Know Your Customer
LCO	Light Cycle Oil
LRMS	Labor Rights and Modern Slavery
MAs	CITES Management Authorities
MACN	Maritime Anti-Corruption Network
MEITI	Myanmar Extractive Industries Transparency Initiative
MoU	Memorandum of Understanding
MSC	Marine Stewardship Council
MSC	Mediterranean Shipping Company
NAAG	National Association of Attorneys General
NABP	National Association of Boards of Pharmacy
NAFDAC	National Agency for Food and Drug Administration Control
NAS	Nuclei Antisofisticazione e Sanità
NDLEA	National Drug Law Enforcement Agency of Nigeria
NEITI	Nigeria's Extractive Industries Transparency Initiative
NFC	Near-Field Communication
NFWFL	US National Fish and Wildlife Forensic Laboratory
NGO	Non-Governmental Organization
NOROG	Norwegian Oil and Gas Operators Association
NPA	National Petroleum Authority of Ghana
NVOCC	Non-Vessel Operating Common Carrier
NVWA	Netherlands' Food and Consumer Product Safety Authority
OCGs	Organized Criminal Groups

OECD	Organization for Economic Co-operation and Development
OAFC	US Department of the Treasury's Office of Foreign Assets Control
OLAF	European Anti-Fraud Office
PEFC	Program for the Endorsement of Forest Certification
PMG	Precious Metals and Gems
PMI	Philip Morris International
PPMS	Petroleum Product Marking Scheme
PPPs	Plant Protection Products
PSCI	Pharmaceutical Supply Chain Initiative
RASFF	Rapid Alert System for Food and Feed Network
ReCAAP	Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Piracy
RFID	Radio Frequency Identification
RFVS	Responsible Fishing Vessels Standard
RJC	Responsible Jewellery Council
RUSI	Royal United Services Institute of the UK
SDGs	UN Sustainable Development Goals
SEC	US Securities and Exchange Commission
SeCA	Southeast Asia e-commerce Anti-counterfeiting
SEO	Search Engine Optimization
SEZ	Special Economic Zone
SFCR	Canada' Safe Food for Canadians Regulations
SF	Substandard and Falsified
SFI	Sustainable Forestry Initiative of the US
SFM	Sustainable Forest Management
SOCTA21	Europol's Serious and Organized Crime Threat Assessment 2021
SoW	System of Warranties
SSC	Sustainable Seafood Coalition
SSFFC	Substandard/ Spurious/ Falsely Labelled/ Falsified/ Counterfeit
TFA2020	Tropical Forest Alliance 2020
TMA	Tobacco Manufacturers Association
TPRM	Third Party Risk Management
TTF	Timber Trade Federation of UK
UAE	United Arab Emirates
UAV	Unmanned Aerial Vehicles
UfW	United for Wildlife
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environmental Protection Programme

UNGCP	United Nations Guidelines for Consumer Protection
UNICRI	United Nations Interregional Crime and Justice Research Institute
UNODC	United Nations Office of Drugs and Crime
UNWTO	United Nations World Tourism Organization
UPU	Universal Postal Union
US	United States of America
USD	US Dollar
USPS	US Postal Service
UV	Ultraviolet
UVI	Unique Vessel Identification
VACCP	Vulnerability Analysis and Critical Control Point
VPAs	Voluntary Partnership Agreements
WBCSD	World Business Council for Sustainable Development
WCO	World Customs Organization
WDC	World Diamond Council
WHO	World Health Organization
WIPO	World Intellectual Property Organization
WJC	Wildlife Justice Commission
WTO	World Trade Organization
WWF	World Wildlife Fund
5MLD	Fifth Money-Laundering Directive

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EXECUTIVE SUMMARY

Organization of the report

Based on the identification of bottlenecks, trends and vulnerabilities found in 10 sectors most vulnerable to illicit trade, this report identifies practices in one sector that can have traction mitigating illicit trade in others.

The findings are illustrated in three parts:

- **Part 1** presents cross-sectoral analysis of the occurrence of illicit trade across the supply chain and in three key hotspots: (i) online platforms, (ii) Free Trade Zones and (iii) postal systems/express couriers. It also addresses how illicit trade intersects with organized crime and related offences and it examines institutional responses and delineates private-sector illicit trade mitigation approaches.
- **Part 2** provides a deeper investigation into each of the sectors most vulnerable to illicit trade and includes sector specific recommendations for mitigating illicit trade.
- **Part 3** outlines general recommendations to address illicit trade as well as remedies common to the 10 sectors.

Illicit trade poses unprecedented global challenges as it creates a series of intertwined threats to economies, security, public health and the environment across the world. In recognition of the growing concern surrounding illicit trade, this study embarks on a journey through a number of sectors that have been found to be especially susceptible to these illicit practices. These sectors are: agrifood, alcohol, fast-moving consumer goods/ cosmetics/ luxury/ electronics, fisheries, forestry, luxury goods, pharmaceuticals, pesticides, petroleum, tobacco and wildlife.

Understanding the imperative to combat illicit trade

Illicit trade has emerged as a major policy and regulatory challenge worldwide. It encompasses a wide spectrum of illegal activities, conducted both offline and online, including narcotics and arms trafficking, environmental and wildlife crime, intellectual property theft, and robbery and resale of antiquities and cultural artifacts. Illicit traders also exploit a wide range of industries, most notably including pharmaceuticals, consumer goods, tobacco, alcohol, entertainment content, oil products, fish, timber, food, precious metals and gemstones, pesticides, and thousands of products vulnerable to trademark counterfeiting and copyright piracy.

Collectively across these sectors, illicit trade creates a vast underground economy estimated to account for 5 to 15 of global GDP, according to WEF. Such a significant diversion of commercial activity presents considerable negative consequences to the global economy. The United Nations Conference on Trade and Development (UNCTAD) notably recognizes that illicit trade crowds out legitimate economic activity and deprives governments of revenues for investment in vital public services.

Illicit trade also presents a direct threat to security and stability. The links between illicit trade and organized crime are well-established. The involvement of members of criminal syndicates has been observed in virtually all global trading sectors, provoking violence, undermining the rule of law, breeding corruption and financing terrorism. These findings are echoed by the US Department of Homeland Security (DHS), which found that illicit goods trafficked to American consumers threaten U.S. national security.

Common grounds for investigation

In the quest to mitigate illicit trade, this report investigates two observable patterns of commonality.

- Illicit trade in all its forms thrives on systemic weaknesses in complex supply chains. Consequently, **Part 1, Chapter I** investigates the complexities of supply chains and transportation modalities. It also provides a cross-cutting analysis of three critical vulnerabilities (i.e., hotspots) that traffickers exploit to advance illicit trade: (i) online platforms, (ii) Free Trade Zones and (iii) postal systems/express couriers.
- The poly-criminal nature of illicit trade manifests itself in traffickers' tendency to practice more than one illegal activity. Counterfeiting, smuggling, money laundering and forced labor are often undertaken in tandem. EUROPOL reports that organized criminal groups involved in trafficking operations are the most poly-criminal groups in the EU, as they typically traffic more than one illicit commodity such as counterfeit goods or different types of illicit drugs. Consequently, **Part 1, Chapter II** investigates the knock-on effects of illicit trade on (i) organized crime, (ii) corruption, (iii) money laundering and (iv) forced labor.

Best practices in governance

Another objective of this report is to sensitize policymakers to the need to engage in a more constructive dialogue with the private sector in the formulation of anti-illicit trade strategies and the design of joint operational tools. Consequently, **Part 1, Chapter III** starts with understanding the scope of existing international regulatory frameworks and law enforcement initiatives addressing illicit trade. It also reveals that the recommendations issued by various Intergovernmental Organizations (IGO) feature a number of common measures that merit consideration by national-level policymakers. These recommendations notably:

- Highlight the close links between illicit trade and organized crime and the critical role that corruption plays as a key enabler.
- Call for the establishment of inter-ministerial task forces/ units coordinating the response to specific manifestations of illicit trade.
- Support industry engagement as a critical partner to assist in illicit trade mitigation efforts.

Sharing and promoting smarter business practices

One of the distinctive aspects of this study is its approach in examining illicit trade through the lens of the private corporation. By delving into how industry stakeholders perceive and tackle the challenges posed by illicit trade, this report showcases practices in one sector that can have traction mitigating illicit trade in another. It thereby promotes the use of the most innovative solutions and new opportunities for collaboration.

Smarter business practices can choke off illicit trade where the supply chain is most vulnerable. For example, a sophisticated anti-counterfeiting technology developed in the pharmaceutical sector may hold potential benefits for identifying counterfeit products in the luxury goods industry. Similarly, sustained engagement of the global transport industry can make it more difficult for traffickers to ship illegal goods regardless of their nature.

Consequently, **Part 1, Chapter IV** delineates the strategies and mechanisms utilized by the companies interviewed for this report, including (i) due diligence, (ii) compliance with established standards, (iii) certification, (iv) online supply chain monitoring, (v) establishment of industry-wide information exchange platforms, (vi) cooperation with law enforcement, (vii) cooperation with transport and logistics intermediaries, (viii) GPS tracking and satellite monitoring, (ix) consumer awareness, (x) track and trace solutions, (xi) product authentication, (xii) leveraging artificial intelligence.

Sector specific reviews

To understand supply chain vulnerabilities and remedies relating to illicit trade occurring in a specific sector, and to identify practices common to other sectors, focused sector reports are presented in **Part 2, Chapters I– X**. Each chapter addresses the occurrence of illicit trade with respect to the complexities of supply chains and transportation modalities. It also provides an analysis of three critical vulnerabilities (i.e., hotspots) that traffickers exploit to advance illicit trade: (i) online platforms, (ii) Free Trade Zones and (iii) postal systems/express couriers.

Given the importance of the UN Sustainable Development Goals, the chapters assess and explain the negative impacts of illicit trade on achieving the goals. They also provide a review of international policy, regulatory and law enforcement responses, including selected national government responses. The sections dealing with private-sector initiatives showcase a selection of public-private partnerships as well as the steps and measures taken by businesses, including technological solutions. Each chapter concludes with a set of recommendations.

Summary of key findings

Supply chains and transport modalities

The evolving nature of global supply chains presents significant challenges for detection and mitigation of illicit trade. The number of intermediaries and their role pose significant challenges to regulatory and control efforts, especially when a supply chain may involve up to twenty-five different entities, ranging from manufacturers to shippers and distributors. Control efforts are even more difficult when sectors combine inputs or ingredients from multiple suppliers, like electronics or food. From a trafficker's perspective, every additional layer of complexity or fragility in the supply chain creates a new opportunity to divert goods from legitimate distribution networks and/ or disguise the illicit nature or origin of an operation.

Illicit supply chains can take diverse routes, often stretching across several countries and continents. For example, illicit wildlife trade is typically transcontinental, with virtually every country in the world playing a role as a source, transit, or destination country. Counterfeit goods are primarily sourced in China and delivered to consumers worldwide.

Common to illicit trade across sectors is that traffickers employ various concealment techniques, exploit transshipment procedures and engage in origin laundering to obfuscate the true origin of goods. To avoid detection during transport, they make extensive use of false documentation, unofficial routes and border blind spots. They may also ship raw materials separately for assembly at destination points and mix illicit items with legal one

- The means of transportation are often chosen depending on the type of illicit products to be trafficked and the official controls to be avoided.
- To disguise the origin and provenance of illegal products, traffickers employ various sophisticated techniques, such as using deliberately complex and long transit routes, crossing borders of multiple countries, and relying on several modes of transportation.
- Origin laundering is also achieved by abusing transshipment procedures, namely the processes whereby cargoes or containers are moved from one means of transport to another during transit.
- False documentation is regularly used, genuine ones are altered, and untruthful declarations are made about the nature or amounts of transported items, shipper and consignee names, and ownership and business activities related to the shipment.
- Other tactics include shipping raw materials, ingredients and components separately for assembly and packaging at warehouses in transit countries or at destination points and camouflaging the illicit nature of certain products by mixing/commingling them with legal ones.
- The maritime transport presents specific challenges. Some concealment techniques involve sophisticated retrofits of vessels, creating complex vessel ownership structures and registering in countries with weak regulations (i.e., "flags of convenience.")

The wide availability of manufacturing equipment on the Internet and the significant advances made by printing technology over the past two decades have significantly lowered the barriers to entry in counterfeit markets. As a result, no specialized skills are needed to create fake packaging that is virtually undistinguishable from the original one. Interviewed companies have reported a significant increase in the quality of counterfeits.

Excessive storage and destruction costs represent a particular concern for industry stakeholders affected by illicit trade practices, especially brand owners. In addition to placing an unfair burden on them, the prohibitive nature of storage costs has the effect of deterring them from contributing their knowledge and resources towards criminal investigations, inspections and related operations.

Online platforms

Illicit trade on e-commerce platforms is a significant concern because traffickers can exploit online channels to gain easy access to markets. All the sectors under review are impacted, except oil, forestry and fisheries due to their nature or perishability.

Illicit trade dealings which were once characterized by direct exchanges between sellers and buyers have now shifted online, with payments made through mobile banking apps and goods delivered by courier/postal systems. Traffickers exploit and operate over a wide array of online channels such as business-to-business exchanges, auction sites, e-commerce sites, social media networks and message boards. The challenge is made more acute by the fact that even when an illegal item is removed from a site, it often appears elsewhere within a short time.

Traffickers notably benefit from the anonymity and minimum exposure that online activities provide, allowing them to avoid controls and to ship considerable amounts of products directly to consumers. The ability of sellers to hide their identity and misrepresent their products is a particularly attractive option, providing them with a relatively ungoverned point of entry into even the best regulated markets.

The sending of unsolicited bulk messages to a very large number of e-mail accounts (i.e., spamming) plays a crucial role in the advertising/distribution channels for illicit goods, especially in relation to counterfeit medicines.

Fraudulent advertising is rapidly emerging as a new trend, driving unsuspecting consumers to third party illegitimate e-commerce sites. Since 2017, many popular international brands have been targeted by fraudulent adverts on Instagram and Facebook, some of which receiving up to a quarter of a million views before they were detected.

In most of the sectors under review, traffickers exploit the features offered by online messaging apps (e.g., WhatsApp, Telegram) to create networks connecting buyers and sellers or directly contacting end customers for illegal sales – all usually done with minimal transparency as to the identity and location of those involved.

Traffickers also exploit the fact that online shoppers cannot physically inspect the products ahead of their purchasing decisions and that they are usually required to pay in advance of delivery. Consumers are further confused when counterfeiters post images of genuine products or offer products at extremely low prices. The fact that online platforms enable the sale of products with the involvement of fewer intermediaries and lower overhead costs was reported as a factor enabling traffickers to offer significantly lower prices.

When illicit online transactions are underpinned by use of anonymous payment systems, the challenges in detection/investigative efforts multiply. The anonymity offered by cryptocurrencies such as Bitcoin makes the financial movements connected to illegal online transactions extremely difficult to follow, if not impossible. Other trusted and protected payment methods such as Paypal are exploited by more than 35 percent of counterfeiters.

Weak regulatory frameworks for commercial transactions and limited online policing by the ecommerce and social platforms are reported as the primary enabling factor for traffickers to exploit Internet-based platforms over traditional outlets and face-to-face commercial exchanges.

Free Trade Zones

Free Trade Zones (FTZs) are special areas established within a country's national territory to boost legitimate trade and attract foreign investment. However, as this report confirms, FTZs are also direct facilitators of illicit trade in most of the sectors under review. In particular, criminal groups are known to exploit FTZs for the production, storage, sale, transit and transshipment of illegal and illicitly traded goods. Of particular concern is the widespread misconception that FTZs are "law-free zones."

The present study identified three primary types of vulnerabilities in FTZs common to all the sectors under review:

- **Exploitation of transshipment procedures.** The misuse of transshipment points in cargo routings, especially through FTZs, represents a significant challenge to combating illicit trade. In practice, illicit operations in FTZs can include assembly, manufacturing, processing, warehousing, re-packaging, and re-labelling to deliberately bypass sanctions, disguise identities, the country of origin or the illicit nature of the goods in question. Once these processes have been completed, the goods are ready to be imported directly to the national territory of the hosting state or re-exported to another FTZ, where the process is repeated.
- **Lack of clarity in the scope of regulations that cover customs controls in FTZs.** In some cases, it is not clear if governmental authorities have jurisdiction to exercise customs controls in FTZs. Weak procedures may be in place for the purpose of inspecting cargo. The regulatory opacity affecting many FTZs, compounded by a general "hands-off" attitude on the part of customs and other law enforcement authorities, offers an attractive playground for unscrupulous actors to engage in illicit trade for a variety of goods.
- **Lax law enforcement attitude and lack of resources.** Given the extremely high volumes of shipments often processed in FTZs, one serious vulnerability is inefficient cargo inspection, often due to shortages of human resources. Interviewed sources explained that large-scale traffickers often abuse FTZs because controls are looser than in other transit ports. In addition, when cargoes are seized, customs authorities have reported that prosecuting illicit trade offences in those zones is less likely to occur. This tendency has been confirmed in relation to FTZs in different regions, including Asia-Pacific, Middle East, and Latin America.

The section on FTZs includes case studies revealing how they facilitate illegal activities, like tobacco smuggling in Panama's Colon FTZ, counterfeit pharmaceutical distribution from Dubai to the Bahamas, and the illicit wildlife trade in Laos' Golden Triangle SEZ.

Postal systems/express couriers

Interviewed sources noted that illicit trade by small parcels is growing in significant volumes, in part due to the increase in online shopping, the proliferation of online marketplaces and e-commerce platforms. These may be subject to limited regulations or inadequate monitoring systems, making it easier for offenders to conduct illicit transactions below the radar.

A survey conducted by the Universal Postal Union (UPU), with the support of TRACIT, found a large number of postal operators reporting counterfeit goods as a major problem. In 2018, OECD noted that nearly 63 percent of customs seizures of counterfeit goods were in the form of small parcels.

- While most sectors under review (except for oil, fisheries and beer, which are less susceptible to trafficking in small parcels) have been affected by illicit trade via small parcels, pharmaceuticals, fake Fast Moving Consumer Goods (FMCG) and luxury goods appear to be most impacted. The use of small parcels is particularly well-suited to counterfeit or otherwise falsified pharmaceutical products, as shipments of both raw active ingredients and completed products can be quite small, easily fit in bubble wrap letter packets and small boxes.
- Counterfeit FMCG manufactured in China are proliferating through the rest of the world through small parcels. Brand owners report extreme difficulties by law enforcement agencies as counterfeiters use different logistics companies and express carriers to avoid detection and change packing so as not to be discovered by technology systems. Interviewed sources from Middle Eastern countries reported that FMCG are among the top three sectors where postal systems are used for illicit trade.

The significant increase in the use of ecommerce platforms to illegally commercialize all types of goods has escalated the problem of illicit trade through small parcels. This growth has outpaced the development and implementation of relevant legal and regulatory frameworks to effectively monitor and intercept illegal goods at the border.

Illicit traders exploit the advantages of trading in small parcels, as they often evade detection by overwhelmed law enforcement agencies. Limited manpower and inadequate infrastructure and technologies hinder a thorough examination of the vast number of small parcels entering ports daily. Offenders exploit this oversight and take advantage of the lower risk of detection compared to larger shipments, which may undergo more stringent inspections.

The verification process for small parcels is typically less rigorous than for larger shipments. Criminals can provide false or insufficient information when sending or receiving small parcels, making it easier for them to operate discreetly and avoid detection.

Illicit goods trafficked through small parcels is a complex problem, which differs between postal carriers and express carriers.

- **Postal carriers.** Traffickers exploit vulnerabilities in structural and institutional frameworks, and the weak IT infrastructure that is unable to adapt to the dynamic nature of illicit trade. The lack of electronic advance data (EAD), inaccurate information, and cumbersome processes to manually review consignment data create multiple points for fraudulent packages to enter the channels.
- **Express carriers.** Express carriers have adopted systems that can provide EAD and implement effective track and trace solutions to remove suspicious packages, enabling them to be more effective partners with customs authorities. However, challenges remain in the quality/accuracy of information, expertise to identify certain categories of illicit goods including counterfeits, cooperation with law enforcement.

Links to organized crime, corruption and other offences

Organized criminal groups (OCGs) exhibit remarkable versatility in engaging in illicit trade across the sectors under review, demonstrating sophistication in sourcing/transportation/distribution practices and infiltrating all stages of supply chains. The COVID-19 pandemic presented both challenges and opportunities for OCGs. While it disrupted illegal supply chains, it also diverted law enforcement focus away from illicit trade.

Domestic legal frameworks for prosecuting illicit traders remain inconsistent, with penalties often lacking deterrence, which in turn encourage traffickers to continue operating in low-risk, high-reward environments.

Some OCGs involved in illicit trade in the sectors under review also participate in narcotics trafficking, terrorist financing, and armed conflicts – fueling political instability and raising heightened security concerns.

Corruption plays a central role in facilitating illicit trade across all sectors reviewed. Countries with burdensome regulations, weak institutions and thriving unofficial economies are particularly susceptible to high levels of corruption. Developing countries often experience increased levels of corruption due to, *inter alia*, low remuneration for officials responsible for combating illicit trade.

Corruption can occur at almost any point in supply chains, involving public officials such as customs/border police officers. Regulatory/inspection agencies may also be involved. Corruption's global cost in the forestry sector, for example, is estimated at USD 29 billion annually, with government officials manipulating documents to make illegal timber appear legal. Insiders, including company employees, have been found to collude with traffickers in sectors such as oil and pharmaceuticals.

Money laundering allows traffickers to distance themselves from their illegal profits by tactics such as introducing proceeds into the legal economy, reinvesting in the same illegal business, or engaging in new illicit trade practices.

To obscure money trails, traffickers often rely on the services of white-collar intermediaries who craft complex financial structures. Cash-intensive sectors like fishing and illicit oil markets facilitate money laundering schemes as well as informal remittance systems - like Hawala. Precious gems are also used for laundering purposes due to the intrinsic characteristics of these commodities and their susceptibility to value manipulation.

Illicit trade fosters a disturbing demand for forced labor due to its pursuit of profit through use of a cheap or even unpaid workforce often made up of vulnerable groups such as children, women and illegal migrants. Forced labor is prevalent across various illicit sectors, from agriculture and minerals to counterfeit goods manufacturing.

International policy, regulatory and law enforcement responses

Illicit trade is addressed by various Inter-Governmental Organizations (IGOs) through a range of tools and mechanisms across different sectors, including treaties, recommendations, guidelines and coordination mechanisms. These often call for the setting up of inter-ministerial task forces, industry engagement supply chain protection measures. Existing instruments and tools vary in structure and content and may need updating to address current challenges.

In the illicit trade space, IGOs often operate in a disjointed manner, which reflects less a lack of political will than the constraints created by their specific bureaucratic mandates. However, the present study also points out a few examples of IGOs reaching out to each other and establishing partnerships to coordinate their responses to illicit trade.

The United Nations plays a major role in addressing illicit trade through its various offices, programs and specialized agencies. Some sectors are dominated by a single IGO that provides comprehensive tools, such as the WHO in the pharmaceutical sector and the FAO in the agri-food sector. However, in other areas such as pesticides, multiple IGOs are involved.

At the regional level, the EU has taken extensive measures to combat illicit trade in its various manifestations, including harmonizing legislation and coordinating law enforcement responses.

From the law enforcement side, IGOs like World Customs Organizations (WCO) and INTERPOL have established global information-sharing mechanisms and coordinate various operations in most sectors under review, leading to arrests and seizures of illicit goods. For instance, INTERPOL's Operation Pangea targets illicit medicines, and Operation Opson focuses on illicit food and drink. Other regional law enforcement initiatives have been found to significantly contribute to illicit trade mitigation goals, such as ReCAAP's efforts to prevent ship hijackings for fuel theft in Southeast Asia.

Private sector initiatives and public-private partnerships

Companies are taking various measures to safeguard their supply chains against illicit trade, considering factors like resource availability, product characteristics and geopolitical constraints. These actions are integrated into broader corporate strategies, aiming to achieve:)i) Positive corporate image, (ii) Risk reduction, (iii) Product safety, (iv) Supply Chain Security, and (v) Consumer Awareness.

Supply chain efforts by private stakeholders to mitigate illicit trade related risks often align with broader initiatives promoting responsible supply chain management, addressing issues such as human rights abuses, forced labor, corruption and money laundering, in line with the UN Sustainable Development Goals.

To operationalize their commitments—often encapsulated in overarching strategic documents and pledges—most companies interviewed for this study have developed codes of conduct whereby they set internal policies (e.g., "know your customers," risk-management, auditing) and requirements for production and sourcing practices. These policies are frequently extended to sub-suppliers.

In certain sectors, methods originally designed to protect supply chains from safety hazards have been adapted to counter criminal exploitation. For example, some companies in the food industry have repurposed food safety measures to combat the deliberate misuse of supply chains.

Several guidelines and standards currently used to secure supply chains in the sectors under review have been first developed in the framework of industry-wide associations. In some cases, the standards elaborated by industry federations complement and even go beyond governmental regulatory environments.

A survey of the strategies and mechanisms utilized by interviewed companies has identified a number of key policies and operational tools to enhance supply chain transparency and integrity. The study delves into each of the following areas by providing industry examples and good practices in addition to highlighting the potential uses of some of the most promising solutions that have just been released or are in the testing stage.

- Monitoring suppliers' compliance with set standards
- Certification
- Online supply chain monitoring/policing
- Establishment of industry-wide information exchange platforms
- Cooperation with law enforcement agencies and other institutional bodies
- Cooperation with transport/logistics intermediaries
- GPS tracking/satellite monitoring
- Development of consumers' awareness and civil society empowerment
- Track and trace solutions
- Product authentication
- Leveraging Artificial Intelligence
- Other private-sector tools and initiatives

Navigating the way forward

Presenting recommendations for mitigating illicit trade

On top of the insights presented throughout the report, the collective objective of this body of work is found in the associated recommendations to achieve more effective controls on illicit trade.

Three types of recommendations have been derived from the production of the report and they are presented in the following ways:

1. **Supply-chain and hotspot-specific recommendations.** These were developed by analyzing remedies common to the 10 sectors evaluated in the report as they occur across the supply chain and in three key hotspots: (i) online platforms, (ii) Free Trade Zones and (iii) postal systems/express couriers.
    - These recommendations are presented in **Part 1, Chapter I** at the end of each section.
    - They are also presented collectively as Consolidated Cross-Sector Recommendations in **Part 3, Chapter II**.
2. **Sector-specific recommendations.** These recommendations emerged from the research and investigations into each of the 10 sectors reviewed for the report.
    - They are presented in the Recommendations section corresponding to each sector chapter in **Part 2, Chapters I - X**.
3. **General recommendations on illicit trade.** These recommendations attend to a grander, big picture imperative to propagate illicit trade mitigation remedies more widely.
    - They are presented in **Part 3, Chapter I**.

Understanding the recommendations

In all three cases, the recommendations are aimed at a diverse array of stakeholders, ranging from governmental authorities (policymakers and law enforcement agencies) to international public officials in charge of designing and implementing illicit trade mitigation programs, to industry actors committed to improving supply chain monitoring.

The featured recommendations also exhibit a dual approach. On one hand, they advocate for high-level, sweeping strategies (i.e., calling on governments to adopt comprehensive strategic frameworks and cultivate robust public-private partnerships). These overarching measures serve as the bedrock for a coordinated and systemic response to the complex issue of illicit trade. On the other hand, the recommendations are focused on specific actions and areas of intervention (e.g., outlining the necessary steps to effectively monitor online platforms, or address the misuse of vessel registration for illicit trade purposes).

In all cases, the recommendations are presented as catalysts for change, sparking discussions in both national and international policy-making circles and contributing to shaping a purposeful response to illicit trade, thus ultimately leading to a safer and more secure global landscape.

Summary of recommendations

General recommendations on illicit trade

The general recommendations presented in this report attend to a grander, big picture imperative to propagate illicit trade mitigation remedies widely. They are presented categorically in detail in **Part 3, Chapter I.**

- Strategies, knowledge and data
- Criminal offences and sanctions
- Smart and innovative prosecutorial strategies
- Inter-agency coordination, information-exchange, treaty actions
- Tax policies and subsidies
- Consumer education and empowerment
- Role of non-governmental organizations
- Collaboration with the private sector

Supply chain and hotspot-specific recommendations

The following list contains the high-level title of the recommendation. Each is more fully developed in **Part 1, Chapter I** in the modus operandi section and in the *Consolidated Cross-Sector Recommendations* in **Part 3, Chapter II**.)

Supply chains and transport

- Strengthen domestic legal frameworks for supply chain monitoring and protection.
- Enable and equip law enforcement to conduct improved supply chain monitoring.
- Improve international law enforcement coordination.
- Empower regulatory/inspection authorities.
- Raise awareness and train institutional actors.
- Provide law enforcement agencies with enhanced technology for supply chain monitoring and policing.
- Leverage the power of technology-based solutions for track and trace.
- Enact sound procedures for product storage and disposal.
- Strengthen due diligence policies and responsible sourcing.
- Enhance action against forced labor
- Step up due diligence action by intermediaries.
- Increase transparency and traceability by verifying shipping documents.
- Leverage technology to monitor the movement of means of transport.
- Strengthen national and international regulations on vessels and their enforcement.
- Enhance the physical protection of means of transport in the maritime domain.

Online platforms

- Extend the regulatory framework applicable offline to online transactions.
- Promote a clean digital environment.
- Implement more robust "know your customer" (KYC) policies.
- Inform consumers regarding third-party sellers.
- Ensure that listings of illicit products are quickly identified and taken down.
- Monitor fraudulent marketing and advertising tactics.
- Channel online intelligence to inform offline enforcement measures.
- Bar repeat offenders from their online marketplaces and share information about repeat infringers with law enforcement and legitimate brands.
- Launch awareness campaigns, including on smart online purchasing.

Free Trade Zones

- Design a regulatory environment conducive to transparent and adequately policed FTZs.
    - Acceptance of Annex D of the Revised Kyoto Convention.
    - Authority for customs to exercise unrestricted rights to enter and observe day-to-day operations.
    - Compliance with the standards enshrined in the OECD's Recommendation on Enhancing Transparency in Free Trade Zones, including the adoption of the Code of Conduct for Clean Free Trade Zones.
    - Empowering regulatory bodies to inspect bonded warehouses located in FTZ.
- Implement strong operational measures to protect FTZs from illicit trade activity.
    - Conduct risk profiling of suspect shipments and ex-officio checks on goods stored and services conducted in FTZs.
    - Extend customs supervision to the FTZ perimeter as well as entry and exit points.
    - Validate the identity of FTZ's economic operators and their clients.
    - Implement "Know Your Customer" and "Due Diligence" measures.
    - Require that FTZ maintain and report on statistical data on goods entering and leaving their territory.
    - Establish or designate a competent authority to issue licenses to manufacture, import, export, broker, or ship raw materials and other key inputs necessary for production within manufacturing and packaging facilities in FTZs.

Postal systems/express couriers

- Improve due diligence at points of entry.
- Encourage better collection and relay of electronic advance data (EAD).
- Encourage cooperation with e-commerce platforms.
- Treat domestic warehouses and fulfillment centers that belong to e-commerce platforms as the ultimate consignee.
- Develop a Suspension and Debarment List.
- Integrate customs screening and examination process into postal processing chains.
- Upgrade information technology (IT) infrastructure for screening.
- Encourage customs authorities to share information back to the carriers to help them improve risk assessments and to blacklist clients that are repeat offenders.

PART 1: CROSS-SECTORAL ANALYSIS

I. MODUS OPERANDI

I.1 Supply chains and transport

1.1 Findings

- Grasping the nature and scale of illicit trade and the degree to which it affects industrial supply chains remains a challenging task. While to a good extent this is explained by the clandestine nature of the phenomenon, the fact that not all elements of illicit trade are properly or comprehensively accounted for by existing reporting initiatives and intelligence-gathering methods should be considered.
- In all the surveyed sectors, the path followed by illicitly traded goods and their transport modalities are severely impacted by the interplay between geographical, demographic, political, and socioeconomic factors. The relationship between these factors occurs in a fast-paced environment, which explains why illicit trade flows and related supply chain dynamics are subject to rapid and often unpredictable change.
- Supply chains are very often sophisticated and fragmented. From a traffickers' perspective, every additional layer of complexity or fragility in the supply chain creates a new opportunity to divert goods from legitimate distribution networks and/or obfuscate the illicit nature or origin of an operation. The fragmentation of the process creates severe challenges for legitimate industry actors and law enforcement authorities in monitoring product origin and tracking its route up to the final destination.
- Collected information suggests that, even within the same industry, supply chains can be vulnerable depending on the nature of the end-product, thus providing illicit traders with a varying number of "entry points." For example, food supply chains for highly processed foods (e.g., snacks) can be particularly exposed to fraudulent behavior as these products often combine ingredients and inputs from multiple suppliers.

- Within the same industry sector, countries can be affected in different ways depending on factors such as geography, socio-economic contexts, and perceived levels of law enforcement effectiveness. For example, oil is commonly siphoned off pipelines in Mexico and Nigeria, in Southeast Asia it is often stolen following the hijacking of ship tankers.
- Depending on consumer preferences, product availability and social acceptability, price gaps between licit and illicit beverages, or quality and degree of law enforcement, different regions display different illicit dynamics. For instance, illicit trade in alcoholic beverages in several Middle Eastern and Latin American countries is mostly driven by smuggling and counterfeit of premium brands. The Western African region is particularly affected by illicit artisanal beverages and Eastern European countries suffer considerably from tax leakage activity and counterfeit brands.
- In the agri-food sector, different food supply dynamics are at play depending on the push and pull factors in various markets all over the world – consumer preferences, price changes, supply and demand, quality of food safety programs, degree of law enforcement. Each food sector is characterized by its own distinctive supply chain map. Ocean-based food transportation supply chains, for example, appear to be particularly vulnerable in view of the high number of intermediaries involved in the shipping industry and sea-related logistics (e.g., freight-forwarders, ports, shipping companies).
- While a good amount of Illegal, Unreported and Unregulated (IUU) fishing globally is conducted in the high sea, in some cases law enforcement authorities' inability and lack of resources in coastal countries mean that some vessels involved in IUU fishing operate very close to the coast – even at just one kilometer from the shore.
- The consumption of wildlife and poaching patterns across the countries under examination change over time and constantly evolve in response to risks and demand factors. In Thailand, for example, there is strong demand for ivory jewelry, while in Indonesia high volumes of birds are traded in open markets to be used as pets.
- Illicit supply chains often stretch across several countries and continents. For example:
    - The illicit wildlife trade is typically transcontinental, with virtually every country in the world playing a role as a source, transit, or destination country.
    - Counterfeit goods follow complex trading routes, which exploit multiple intermediary transit points. Many of these transit economies, such as Hong-Kong (China), Singapore or the United Arab Emirates, are well developed, high-income economies and important hubs of international trade.
    - Nearly 40 percent of the pharmaceutical drugs circulating in the US are made elsewhere, and about 80 percent of manufacturing sites of active pharmaceutical ingredients used in drugs manufactured in the US are located outside its borders – in more than 150 countries, many with less sophisticated manufacturing and regulatory systems.

- Interviewed sources have reported that global supply chains can involve up to twenty-five different entities – ranging from manufacturers to shippers and distributors. The number of intermediaries involved in illicit trade schemes poses significant challenges to regulatory and control efforts. For example:
    - As highlighted in a Chatham House report focusing on illicit oil in Nigeria, "the government's system for selling its own oil attracts many shadowy middlemen, creating a confusing, high-risk marketplace. (…) The specifics of who steals oil are elusive, even in Nigeria. A typical large-scale theft network has facilitators, operations and security people, local and foreign transport, buyers and sellers, and a range of opportunists".
    - The production and trade of illegal wood-based products involves a wide range of actors and enterprises along the supply chain, from source forests to consumer markets. Small-scale loggers, national and multinational logging and wood-processing enterprises, brokers with related white-collar agents, and shipping companies play different roles in the illegal production and trade, often through their licit commercial activities.
    - Wildlife traffickers rely on networks of colluding officials within customs, immigration and port agencies to avoid detection. Local intermediaries (e.g., packers) contribute to preparing the merchandise for circulation.
- Traffickers employ a wide range of operational modalities, trade routes and concealment techniques to go undetected, often exploiting customs' limited capacity to carry out effective container risk assessment and profiling processes and consequent low detection rates for illegal shipments.
- Concealment methods vary and are adjusted in light of the specific context surrounding each operation. Collected information suggests that the means of transportation are often chosen depending on the type of illicit products to be trafficked and the official controls to be avoided. The selection of specific transport modalities also corresponds to the ever-evolving interplay between geographical, political, and socioeconomic factors.
- The path and supply chain modalities chosen for a certain product or class of products is notably influenced by traffickers' need to achieve "origin laundering." This refers to a series of practices aimed to obfuscate goods' actual countries of origin – especially those that have been red flagged for being significant exporters of illegal products – to reduce the likelihood of controls/inspections by law enforcement authorities. Examples of dynamics aimed at achieving origin laundering include:
    - In the oil sector, an offshore facility in Ghana with a maximum producing capacity of one hundred thousand barrels per day was found exporting four hundred thousand barrels per day. The facility was being used to launder stolen Nigerian crude, which would be exported from the offshore site with a legitimate Ghanian export certificate.
    - Global fish supply chains often involve countries through which raw seafood transits only to be processed before being re-exported. This feature is frequently exploited by IUU fishers who seek to disguise product origin by making it appear as though it was legally originating from the processing country.

- To disguise the origin and provenance of illegal pesticides, criminal groups employ various sophisticated techniques, which include use of deliberately complex and long transit routes, crossing borders of multiple countries, and relying on several modes of transportation.
- Origin laundering is often achieved by abusing transshipment procedures, namely the processes whereby cargoes or containers are moved from one means of transport to another during transit, and by the contextual reliance on forged documents and/or misdeclarations. These represent critical tools in efforts by traffickers to move their merchandise undetected and obfuscate points of origin.
- Interviewed companies and other sources examined for this study have provided several illustrations of the purposes for which false documentation is created, genuine ones are altered, and where untruthful declarations are made about the nature or amounts of transported items, shipper and consignee names, and ownership and business activities related to the shipment. For example:
    - Trafficked wildlife species from across Southeast Asia are exported and transited taking advantage of fraudulent certification schemes.
    - Illegal pesticides are mis-declared and unclear/incomplete information is often provided in shipping documents. Moreover, most illegal products are not declared as "dangerous goods."
    - Document forgery is used to produce fake fishing licenses, for example to show permission to catch certain species or operate in certain sea zones. It is also instrumental in producing fake catch records, including by keeping two distinct fishing logs – a secret one and an official one in case of inspection.
- Reports indicate that warehouses are not only used for storing merchandise in transit, but also as logistical hubs for making detection more challenging. Illegal pesticides, for example, are often assembled in warehouses and self-storage facilities in transit countries.
- An increasingly employed methodology to avoid detection by law enforcement agencies and allegations of trademark counterfeiting/infringement consists of shipping raw materials, ingredients and components separately for assembly and packaging at destination point.
- The wide availability of manufacturing equipment on the Internet and the significant advances made by printing technology over the past two decades have significantly lowered the barriers to entry in counterfeit markets. As a result, no specialized skills are needed to create fake packaging that is virtually undistinguishable from the original one. Interviewed companies have reported a significant increase in the quality of counterfeits.

- There is no standard process across countries to destroy and dispose of illicitly traded goods. Some countries send shipments back to the manufacturers and exporters as they do not have the disposal capacity in an environmentally sound manner. Other countries put illicit seized goods on auction. These are then bought by illicit traders for a cheap price. The above mechanisms provide opportunities for criminals to reinsert the illicit goods back into legitimate supply chains. There are other cases where those goods stored in warehouses are illegally removed and enter markets.
- Sources analyzed for this study emphasize the wide variety of techniques and circumstances exploited by traffickers to hide illicit goods during transport, especially through border crossings:
    - Using unofficial routes or border blind spots. Borders may be very permeable and crossed by foot, by horse or all-terrain.
    - Concealing alcohol products inside luggage, voluminous products (e.g., mattresses) or secret compartments in vehicles.
    - Hiding wildlife in bags and mixing it among declared goods. Containers' very structure are sometimes modified to hide the illicit consignment, for example by installing a double wall.
    - Exploiting porous borders. In the Democratic Republic of Congo (DRC), for example, traffickers rely on the state's inability to control its territory and borders. Reportedly, around 70 per cent of the gold being mined in the DRC is exported illegally, reaching up to 95 per cent in the Eastern DRC. India's long and porous coastline also allows criminal operations to smuggle PMGs, the largest sources of smuggled gems being Myanmar and Afghanistan.
    - Defrauding customs by not declaring the real value or disguising the true nature of the metal.
    - Employing smugglers, known as "mules," to carry stones from the mine over treacherous terrain to gem brokers in bordering countries who sell to international buyers. During the trip, the "mule" — usually a woman — will have to cross several official border crossings, where lackadaisical government officials conduct a cursory inspection. Many individual "mules" claim not even to be aware of the illegal nature of their actions. The smuggler pays a bribe to the official and is waved through.
    - A frequently reported technique consists of disguising the illicit nature of certain products by mixing/commingling it with legal ones. This technique has been observed across the board, particularly in trafficking operations for precious metals and gems, IUU fishing, and alcohol.
    - Gold can be easily reworked, and substantial amounts of illegally mined gold can be mixed with scrapped gold and sold to legitimate refineries, or it can be melted and mixed with other licit metals to become part of the legal supply chain.

- A common modus operandi to counterfeit wine involves placing cheap wine in bottles containing fake labels of expensive brands. In some cases, pure alcohol is added to low-quality wine to increase the alcohol percentage. Counterfeiters either reuse original bottles or print counterfeit labels to place on empty bottles. In general, it can be quite challenging to distinguish licit from illicit alcohol, particularly when distributors are simultaneously engaged in legal and illegal activities.

- This study has identified a number of methods specifically employed by traffickers in the maritime domain. These include:
  - Use of inefficient vessels as part of a fleet engaged in IUU operations. Aging vessels may be employed as "baits" to keep inspectors/ law enforcement busy while the rest of the fleet circumvent controls and manage to escape.
  - Registering vessels in countries with weak regulatory frameworks and lax enforcement over the vessels, their crew and operations ("flags of convenience").
  - Utilizing complicated vessel ownership structures, such as using shell companies to avoid traceability of ownership across ports and jurisdictions.
- Some concealing techniques may reach high levels of sophistication and inventiveness, such as those employed by oil smugglers who have been observed retrofitting ordinary fishing trawlers to be able to move undetected significant amounts of stolen fuels across international borders. Illegal oil transfers are often conducted from ship to ship on neutral waters – with one ship recognized as carrying legitimate imports at the final port of destination. In this way, for example, illegal crude oil from countries such as Libya or Syria has found its way to EU markets. Regarding IUU fishing, there have been reports of traffickers concealing or painting over vessel names with a view to thwarting monitoring and enforcement activities.
- Traceability efforts may be severely curtailed by the specific nature, size or shape of certain types of illicitly traded goods. For example:
  - The low weight and high value of some precious minerals allow for easy smuggling and high returns.
  - Illicit gold has been found to be reshaped into forms which are easier to conceal from border authorities, including "everyday objects" such as souvenirs wrenches, nuts, bolts and belt buckles.
  - While illicit trade operations often require that products be concealed to avoid detection by customs authorities, the same cannot be said of adulterated food. Usually, only a laboratory analysis can determine whether prohibited or substandard ingredients have been added to food items, these can be easily moved undetected across borders, mixed into the licit economy and then circulated as legitimate goods. Many illicit food items enter markets through the same routes as the ones followed by legitimate products.

1.2 Recommendations

- **Strengthen domestic legal frameworks for supply chain monitoring and protection.** Illicit trade mitigation efforts require adopting/strengthening regulatory measures which are often scattered in different pieces of a country's normative frameworks (e.g., consumer legislation, customs, intellectual property, trade, criminal law). Governments should evaluate the adequacy of often-disjointed measures and processes to mitigate illicit trade and insert illicit trade provisions where appropriate. They should also strive to have illicit trade prevention regulations harmonized across regions.
- **Enable and equip law enforcement to conduct improved supply chain monitoring.** Customs and other border control agencies have a key role in combating illicit trade at borders, with officers on the front-line conducting inspections and detecting/seizing illicit goods. It is essential for governments to equip those agencies with adequate tools (technological, material, human/know-how) leading to the development of more accurate "red flags" about suspected illicit trade practices and streamlining detection and inspection procedures. Specific recommendations include:
    - Thoroughly reviewing incomplete/suspicious documentation and sharing information with rights holders.
    - Focusing on suspect or incomplete bills of lading.
    - Empowering customs authorities to take enforcement action to seize or suspend the release of illicit products and those suspected of infringing laws when they are imported, exported, in-transit and in all situations where the goods are under customs supervision, including in free trade zones or other zones with special economic and tax regimes as well as bonded warehouses.
    - Adhering to supply chain security schemes such as the World Customs Organization's Authorized Economic Operator (AEO) program with a view to reducing risk from exposure to illicit activities.
    - Implementing a digitized Customs Recordal System for intellectual property rights to ensure that key information can be easily accessed by enforcement officers.
    - Promoting the adoption of sound, intelligence-based risk-management approaches for the detection of illicitly traded goods by customs agencies. This could be based on the organizational framework and processes outlined in the World Customs Organization's (WCO) Customs Risk Management Compendium.
    - Implementing a comprehensive digital environment for border clearance, based on the notion that automated systems reduce human touch points and opportunities for corruption.
    - Ensure a balanced implementation of the World Trade Organization (WTO) Trade Facilitation Agreement to ensure that "quick and easy processing" does not obviate long-standing customs and tariff systems necessary to control illicit trade.
- **Improve international law enforcement coordination.** Countries should enhance their law enforcement capabilities against illicit trade by reaching out to other

countries through better information-sharing mechanisms, coordination of joint, intelligence-driven operations such as sea patrols, and the establishment of inter-agency protocols and arrangements to optimize and share law enforcement resources and tools.

- **Empower regulatory/inspection authorities.** Regulatory and inspection authorities should be enabled to assist in the detection of illicit goods by performing risk-based raids and monitoring the market, participating in border control activities for imported, exported, and transiting products, conducting investigations either alone or in cooperation with law enforcement authorities, providing access to testing laboratories and screening technologies, and managing both national and international reporting systems.
- **Raise awareness and train institutional actors.** Awareness-raising programs and informative working sessions should be designed and systematically delivered to law enforcement, regulatory agencies and other relevant institutions with mandates and responsibilities in tackling illicit trade. Specific actions should include:
    - Continuing to promote a shift in attitudes whereby illicit trade is no longer perceived as a victimless crime, but rather one that contributes to organized crime, often relies on forced labor, and generates significant proceeds and connected money laundering operations.
    - Offering specialized training programs to front-line officers to support them in the detection of illegal products.
    - Reviewing national training curricula for law enforcement agencies to ensure that illicit trade is a central component.
    - Educating intermediaries, both in the off-line and on-line world, on how their infrastructure is vulnerable to and exploited by illicit trade.
    - Training the law enforcement community, especially customs authorities, on identifying counterfeits from genuine products and how to report this to brand owners.
- **Deliver technical assistance.** Technical assistance programs, tools and resources should be made available to support authorities, especially in developing countries, to carry out their functions more effectively. Mechanisms should be created for allocating resources to help authorities in complying with international standards, including for the setting up and functioning of data collection and information-sharing mechanisms.
- **Provide law enforcement agencies with enhanced technology for supply chain monitoring and policing.** While it is impossible to physically monitor, control, and secure borders through manpower alone, the use of advanced technologies, such as unmanned aerial vehicles (UAV), embedded sensor, cargo shipment data mining with risk analytics, next generation surveillance cameras and robotics should be considered among the tools in the hands of customs and border patrol agencies to deter illicit trade flows. By leveraging technology, customs and other law enforcement agencies can alleviate some of the burdens associated with managing the physical scale of transport geography.

- **Leverage the power of technology-based solutions for track and trace.** Track and trace solutions are critical to identify a product's origin and its chain of custody. In choosing the most appropriate traceability solutions, special consideration should be given to adopting end-to-end, electronic (as opposed to paper-based) and interoperable systems (i.e., systems that use a common data format and are able to interpret information based on shared definitions). Governments and technology providers should strive to overcome the obstacles that often stand in the way of using track and trace effectively. Adopting technological solutions should be delivered with adequate training packages for those who are supposed to operate them and effective, reliable service support.
- **Enact sound procedures for product storage and disposal.** Suspect counterfeit goods that are under adjudication should be stored in proper facilities that cannot be infiltrated by counterfeiters such that the products go back into channels of commerce. Once the goods are confirmed to be fake, they should be destroyed in an environmentally friendly manner, without the need for right holders to initiate court proceedings. Customs may need to engage with specialized agencies that can transport the illicit goods into their premises for safe dismantling, secure cost-effective storage and immediate destruction for confirmed illicit goods while mitigating the impact on the environment. Additionally, consideration should be given to establishing a mechanism whereby confiscated proceeds of counterfeit offences are placed in a special fund to offset the costs of storage and destruction.
- **Strengthen due diligence policies and responsible sourcing.** Industry stakeholders should conduct detailed due diligence on suppliers, buyers, traders and other contractors. This includes working proactively towards mitigating the risk of illicit trade practices affecting not only their own organizations directly, but also their entire value chain. In this context, understanding how other industries, including in different sectors, carry out due diligence processes could provide important lessons and support in the development of workable schemes. Private-sector entities affected by illicit trade should also adhere to and fully implement available governmental and industry-based guidelines and policies on responsible sourcing. Methodologically, company controls on their supply chains may follow a three-pronged approach based on:
    - Conducting vulnerability assessment.
    - Designing and implementing mitigation strategies.
    - Regularly reviewing the illicit trade management system.
- **Enhance action against forced labor.** Companies should strive to source directly from suppliers with demonstrated compliance to labor laws rather than through intermediaries. Governments should provide adequate financing and capacity building for labor inspectors, who often face remote and dangerous working conditions themselves. Companies should support such investment by promoting regulatory environments that contribute to the fight against forced labor.
- **Step up due diligence action by intermediaries.** Intermediaries should:
    - Develop and maintain a caution list of fraudulent shippers/clients (persons, companies, freight forwarding and clearing agents suspected of involvement in illicit trade activities).

- Ensure the timely provision of shipping documentation to customs agencies to enable effective container/cargo risk profiling and investigations.
- Conduct due diligence when hiring new employees to verify their integrity and any potential past involvement in fraudulent activities.

- **Increase transparency and traceability via shipping documents.** Shipping (export/import) documents need to be verified to ensure whether traded goods are legal and registered in the country where they are manufactured and in the country of intended use. Product labels/containers and corresponding shipping documents should contain explicit and unambiguous information about content, origin and destination.
- **Leverage technology to monitor the movement of means of transport.** Law enforcement agencies and industry stakeholders need to leverage technology (e.g., satellites) for the purpose of monitoring and tracking vessels suspected of carrying illicitly traded goods such as oil, wildlife or fish. For satellite tracking to work properly, it is important for domestic agencies to run parallel surveillance systems to coordinate their programs and share satellite-generated information. Also, surveillance hardware and capacities need to be improved.
- **Strengthen national and international regulations on vessels and their enforcement.** In maritime transport, key recommendations to prevent ships from becoming tools for illicit trade and other illegal activities include:
  - *Disincentivizing the use of flags of convenience.* To reduce the attractiveness of flags of convenience (i.e., the practice whereby a ship is registered in a country other than that of the ship's owners) by illicit traders, countries should explore the adoption of "Flag State Performance Tables" whereby flag states are ranked according to their compliance with their obligations under international maritime law. A low ranking may create an economic disincentive for cargo owners to avail themselves of vessels registered in underperforming flag States.
  - *Expand the use of Unique Vessel Identifiers (UVI).* Countries should accelerate the process of requiring UVI as an important measure to prevent vessel owners from avoiding detection by resorting to complex vessel naming, registration and incorporation schemes (known as "flag hopping"). Once assigned, the UVI should remain with the vessel throughout its life, ensuring traceability irrespective of changes in flag, ownership, name or other.
- **Enhance the physical protection of means of transport in the maritime domain.** Given that maritime routes represent by far the most used transport channel for illicit goods, it is critical to improve the ability of domestic law enforcement agencies to address illegal conduct exploiting maritime means of transport. To protect oil-carrying vessels against robbery, for example, shipping companies should systematically review their ship security plans and standard operating procedures by complying with international instruments such as the International Ship and Port Facility Security (ISPS) Code. This includes, among others, the installation of physical ship protection measures, crew screening, conduct of crew briefing/training and maintaining confidentiality of the voyage route whenever possible.

I.II Hotspots

1. Online Platforms

1.1 Findings

- Interviewed sources consistently stress that a major concern surrounding e-commerce platforms lies in their high potential to be exploited for illicit trade purposes. Trade dealings, which were once characterized by direct exchanges between sellers and buyers, have now shifted online, with payments made through mobile banking apps and goods delivered by courier/postal systems. Traffickers exploit and operate over a wide array of online channels such as business-to-business exchanges, auction sites, e-commerce sites, social media networks and message boards. The challenge is made more acute by the fact that even when an illegal item is removed from a site, it often appears elsewhere within a short time.
- The Internet is offering an increasingly viable channel for distributing illicitly traded goods to domestic and international markets. Traffickers notably benefit from the anonymity and minimum exposure that online activities provide, allowing them to avoid controls and to ship considerable amounts of products directly to consumers. The ability of sellers to hide their identity and misrepresent their products is a particularly attractive option, providing them with a relatively ungoverned point of entry into even the best regulated markets.
- All the sectors under review in this study have been significantly impacted by online illegal trading except for petroleum products, forestry products and IUU fishing. Online platforms have not yet been suitable for the trade and delivery of forestry-related and oil products due to their nature and volumes. As to IUU fishing, lack of evidence on the use of online platforms has been linked to the perishability of this specific commodity.

- Data collected for this study illustrates the magnitude of illicit trade volumes going through online channels. Some data include:
    - Online alcohol sales in the U.S. reached $1.7 billion in 2017, with grocery stores poised to become the main channels for the delivery of products bought online. Globally, it is estimated that alcohol sales will increase at an annual growth rate of 2 percent through 2025, driven in part by a greater demand for "premium/ super premium products" – which, when it comes to alcohol, are for many consumers easier to buy online than inside local stores.
    - Illegal actors increasingly sell illegal pesticides directly to farmers via the Internet. Illegal pesticides imported into the US as a result of online sales on Amazon are estimated to be large in number, with nearly 4,000 violations of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) recorded over the last five years.
    - The WHO estimates that 50 percent of drugs sold online are fraudulent. Further, 90 percent of drugs purchased online come from a different country than the website claims. The Centre for Safe Internet Pharmacies reports that 600 new illegal online pharmacies are launched every month, taking advantage of this ever-increasing market that has generated a staggering USD 11 billion in illicit revenue.
    - In the luxury goods and cosmetics sectors, there has been a substantial increase in counterfeits listed online, which creates an enormous burden for brand owners to monitor. In these sectors, 87 percent of counterfeits are acquired online.
- Due to the combined effect of global social-distancing measures and travel restrictions in 2020 and 2021, several companies and law enforcement agencies reported a significant increase in the use of digital platforms to illegally commercialize all types of goods. Wildlife trafficking moved online due to the closure of wet markets to contain the spread of the virus. Recent increases in the sale of illicit pesticides have also been especially linked to the COVID-19 pandemic. Consumers and businesses have unknowingly acquired a wide range of counterfeit and illicit products including apparel, electronics, car and appliance parts, toys, medical devices, etc.
- The sending of unsolicited bulk messages to a very large number of email accounts (i.e., spamming) plays a crucial role in the advertising/distribution channels for illicit goods, especially in relation to counterfeit medicines. In addition to promoting single products, spam messages are often a way to promote an entire illicit website or an illicit chain of websites.
- Fraudulent advertising is rapidly emerging as a new trend, driving unsuspecting consumers to third-party illegitimate e-commerce sites. Since 2017, many popular international brands have been targeted by fraudulent adverts on Instagram and Facebook, some of which receiving up to a quarter of a million views before they were detected.

- Platforms such as Facebook and Instagram have become leading channels for various forms of illicit trade. Instagram's checkout feature offers a prime example of how counterfeiters are able to find their target audience and strike a sale through sponsored Instagram 'Stories'. The bonus is that they disappear after 24 hours. This time-lapse makes it easy for counterfeiters to advertise their knockoffs and then disappear without detection.
- In most of the sectors under review, traffickers exploit the features offered by online messaging apps:
    - Counterfeiters' first choice of direct contact with their end customer appears to be WhatsApp, with almost 57 percent of them choosing it as their commercial instant messaging tool. While end-to-end encrypted security is virtually risk-free, the absence of regulations and third-party monitoring makes it an ideal platform for conducting illegal sales as well as to disguise the location of those involved.
    - Online purchases of illegal tobacco in Eastern Europe, including Ukraine and Russia are mostly conducted via Telegram. The fact that there is no need to have a phone number to download and use it makes it significantly more difficult to identify users. Moreover, the "find people nearby" tool facilitates the connection between illicit traders and customers.
    - Smugglers and middlemen exploit platforms such as Facebook and WhatsApp to create networks for offering conflict diamonds to international markets. Investigators from Global Witness (an NGO) posed as smugglers by creating online profiles and reported communicating easily via WhatsApp and Facebook Messenger with smugglers who sold diamonds in countries like Belgium, France, Brazil, Israel and the Middle East.
- Weak regulatory frameworks for commercial transactions online provide significant incentives for traffickers to exploit Internet-based platforms over traditional outlets and face-to-face commercial exchanges.
- In addition to the regulatory gaps affecting the ability to detect and mitigate Internet-based illicit trade, online policing is often reported as a low priority for some law enforcement agencies.
- Traffickers also exploit the fact that online shoppers cannot physically inspect the products ahead of their purchasing decisions and that they are usually required to pay in advance of delivery. Consumers are further confused when counterfeiters post images of genuine products or seemingly similar packages of fake goods.
- When illicit online transactions are underpinned by use of anonymous payment systems, the challenges in detection/investigative efforts multiply. The anonymity offered by cryptocurrencies such as Bitcoin makes the financial movements connected to illegal online transactions extremely difficult to follow, if not impossible. Other trusted and protected payment methods such as PayPal are exploited by more than 35 percent of counterfeiters because the secured payment options help counterfeiters provide a message of trust to their client base.

- Traffickers were found to have a significant incentive to move their businesses online so as to sell directly to consumers. In all surveyed regions, for example, the delivery of both alcohol, tobacco and food products ordered online is generally done directly to the customer's domicile or on agreed delivery spots, such as crossroads. Also, because there are fewer opportunities for inspection and face-to-face encounters, online transactions shield criminals from capture.
- The fact that online platforms enable the sale of products to the public with the involvement of fewer intermediaries was also mentioned as a circumstance allowing traffickers to significantly lower prices. Cyber intelligence analysts, for example, found a store on the Darknet called "Africa Products" which sold discounted diamonds, raw gold and rhino horns directly to consumers. The website claimed that they could gather and sell the products so cheaply because of near zero overhead costs.

1.2 Recommendations

- **Extend the regulatory framework applicable offline to online transactions.** While many industries impacted by illicit trade are the object of extensive and detailed regulations when they trade through traditional offline channels, existing laws are often not being applied to e-commerce. In the pesticide sector, for example, the law of 'registration in country of use' is being ignored through online sales, allowing many sellers to trade without proper registration certificates. Countries should thus adopt regulatory frameworks ensuring that online platforms require proof of seller credentials, which includes verifying that vendors have a license to sell the products.
- **Promote a clean digital environment.** Their vulnerability to exploitation and misuse by illicit traders makes it compelling for online platforms to use the full range of tools at their disposal to support law enforcement agencies and the legitimate industry sector in countering illicit trade. E-commerce and social media companies should systematically monitor their platforms for illegal trading activity, including by creating country-specific monitoring teams, and take prompt action when they come across cases or when these are reported by users.
- **Implement more robust "know your customer" (KYC) policies.** Online platforms should be required to implement robust "know-your-customer" (KYC) policies to mitigate fraudulent listings, such as:
    - Improving verification requirements of sellers to know who is trading on their platforms, including physical addresses and other contact information, bank details, and other identity checks such as business license.
    - Requiring sellers to certify their products do not violate registered trademarks, distribution agreements or laws, and agreeing to provide consumers redress, including refunds, when they discover a counterfeit good in the seller's listings.
    - Holding sellers to strict terms of use that forbid engaging in illicit activities and consenting to strong penalties when such terms are violated.

- **Inform consumers regarding third-party sellers.** Online platforms should provide basic information about the third-party seller for each product listing, including basic contact information and country where the product was assembled, along with an easy-to-use mechanism for the consumer to report a suspicious product.
- **Ensure that listings of illicit products are quickly identified and taken down.** Online platforms should strengthen partnerships with law enforcement and brand owners with a view to promptly removing Internet content relating to illicitly traded goods. This includes illicit goods traded within closed groups, i.e. groups that can be seen by the public but only members can access the posts, discussions, photos or files shared within the group. To this end, online platforms should expand the use of automatic detection tools based on images or trade terms typically utilized by trafficking networks. These tools should include key terms in multiple languages.
- **Monitor fraudulent marketing and advertising tactics.** Monitor online promotional initiatives taken by traffickers, who often use the same techniques employed by legitimate marketers and leverage the existing market base built by the legitimate brands, including paid search advertising, links within social media, black hat search engine optimization (SEO) tactics, cybersquatting and spam.
- **Channel online intelligence to inform offline enforcement measures.** Because offline measures such as physical investigations, factory raids and other activities can be costly and time-consuming, it is critical to know where these operations should be focused. Online intelligence can thus help identify the biggest infringers, so that offline law enforcement efforts can be prioritized accordingly.
- **Bar repeat offenders from their online marketplaces and share information about repeat infringers with law enforcement and legitimate brands.** Unfortunately, many bad actors that are removed from an ecommerce platform often quickly reappear a different identity. Online platforms should deter repeat infringers by 1) temporarily or permanently suspending or restricting the seller's account; 2) take actions to prevent re-registration of permanently suspended sellers and 3) cross-check databases with a view towards identifying multiple accounts maintained by the repeat infringers.
- **Launch awareness campaigns, including on smart online purchasing.** Consumers should be better enabled to recognize the most common patterns of illicit trade and products conducted online, and empowered to obtain redress, whether through private dispute resolution mechanisms, consumer protection legislation or the national justice system.

2. Free Trade Zones

2.1 Findings

- Free Trade Zones (FTZs) are special areas established within a country's national territory to boost legitimate trade and attract foreign investment. They do so by eliminating tariffs, quotas and other taxes, and minimizing bureaucratic procedures such as disclosure requirements. FTZs offer several economic incentives, including streamlined customs procedures, import and export duty exemptions, and liberal foreign exchange policies. However, as the present report has confirmed, FTZs are also direct facilitators of illicit trade conduct in most of the sectors under review. In particular, criminal groups are known to exploit FTZs for the production, storage, sale, transit and transshipment of illegal and illicitly traded goods. Of particular concern is the apparently underlying and widespread misconception on the part of customs and other criminal justice actors that FTZs are "law-free zones."
- Under this project, no information could be gathered on FTZs as channels/hot spots to specifically facilitate the illicit trade in agri-food and oil, or in terms of their involvement in IUU fishing. Only limited data was available on illicit trade in precious metals and gems (PMG). This does not necessarily indicate that the above-mentioned sectors are not subject to illicit trade via FTZs as it could well mean that certain illicit activities have so far been conducted under the radar of law enforcement officials. In the case of PMG, one reason that has been adduced for the dearth of data

is the ease with which these may be disguised, concealed and smuggled. Moreover, it is possible that current investigative projects have focused on the role of FTZs in facilitating certain types of illicit trade at the expense of others. Future research projects could shed light on why limited data is available in relation to some sectors.

- The present study identified three primary types of vulnerabilities in FTZs common to all the sectors under review (except for the three above-mentioned sectors in relation to which data was not available):
    - *Exploitation of transshipment procedures.* The misuse of transshipment points in cargo routings, especially through FTZs, represents a significant challenge to combating illicit trade. In practice, illicit operations in FTZs can include assembly, manufacturing, processing, warehousing, re-packaging, and re-labelling to deliberately bypass sanctions, disguise identities, the country of origin or the illicit nature of the goods in question. Once these processes have been completed, the goods are ready to be imported directly to the national territory of the hosting state or re-exported to another FTZ, where the process is repeated.
    - *Lack of clarity in the scope of regulations that cover customs controls in FTZs.* In some cases, it is not clear if governmental authorities have jurisdiction to exercise customs controls in FTZs. Weak procedures may be in place for the purpose of inspecting cargo. The regulatory opacity affecting many FTZs, compounded by a general "hands-off" attitude on the part of customs and other law enforcement authorities, offers an attractive playground for unscrupulous actors to engage in illicit trade for a variety of goods.
    - *Lax law enforcement attitude and lack of resources.* Given the extremely high volumes of shipments often processed in FTZs, one serious vulnerability is inefficient cargo inspection, often due to shortages of human resources. Interviewed sources explained that large-scale traffickers often abuse FTZs because controls are looser than in other transit ports. In addition, when cargoes are seized, customs authorities have reported that prosecuting illicit trade offences in those zones is less likely to occur. This tendency has been confirmed in relation to FTZs in different regions, including Asia-Pacific, Middle East, and Latin America.

The following case studies provide illustrations, from specific sectors and different geographical areas, of the range of criminal schemes for which FTZs have been exploited:

- *Tobacco:* A number of FTZs in different regions of the world have become notorious for their decisive role in the illicit trade of tobacco products. For example, interviewed sources named the Colon (Panama) FTZ as a hub exploited by illicit traders specialized in the trafficking of "illicit whites". Nearly all illicit whites entering Panama find their way into the country through FTZs. The modus operandi consists of transporting large shipments of illicit whites coming from Asia to the Colon FTZ, where the origin of the products, content and/or value of the cargo are mis-declared. Moreover, there have been indications of corruption by officials in the FTZs turning a blind eye to tobacco shipments. Parallel to these practices, smaller-scale operations have also been detected whereby individuals with access to warehouses in the Colon

FTZ snatch genuine products without declaring them. Field investigations revealed that a package of an illicit white brand originating in India was sold in the Colon FTZ to the public for USD 0.5, whereas a genuine package of a registered brand in Panama costs around USD 5. Illicit whites and other smuggled tobacco products that enter the Panama through its FTZ are later diverted across several Latin American countries.

- *Pharmaceutical products:* In 2006, UK customs agents seized 384 kg of pharmaceuticals, most of which turned out to be counterfeits of brands belonging to Merck, Novartis, AstraZeneca, Pfizer and Procter & Gamble. The shipment was in transit from the Oyster Corporation, established in the Sharjah FTZ in Dubai, to the Personal Touch Pharmacy, established in the FTZ of Freeport, Bahamas. A search warrant by the Royal Bahamas Police Drug Unit resulted in the seizure of several illicit medicines and uncovered a fulfilment center for Internet orders placed with an illegal on-line pharmacy based in Canada. The day after the raid in the Bahamas, suspect pharmaceuticals stored in the Sharjah FTZ were moved to an unrelated facility in the Jebel Ali Free Zone in Dubai, in an attempt to avoid further detection. The investigation eventually unraveled a complex supply chain of fake drugs that ran from China through Hong Kong, the UAE, UK, and the Bahamas, ultimately to be sold online to customers as Canadian medicines. The Bahamas served as the place where prescriptions were filled and packaged. The goods would then be sent to the United Kingdom for final shipment to customers in the United States, with the UK postage intended to assuage any concerns consumer might have about the reliability or origin of the products.
- *Wildlife:* Located in Laos, the Golden Triangle Special Economic Zone (SEZ) is a joint venture between the Lao government and Kings Romans International. While its official purpose is the promotion of tourism and international trade, the Golden Triangle SEZ gained a reputation as a hotspot for the illicit trade in wildlife (ITW). An investigative report by a consortium of anti-corruption organizations highlighted enablers and characteristics of corruption schemes and ITW in the Golden Triangle SEZ that are also common to many FTZs. These include poor customs controls and insufficient governmental surveillance. According to interviews for that report, corruption enabling ITW in the Golden Triangle mostly takes the form of officials omitting their duties. In practice, public officials and managing authorities are regularly notified of inspections in advance, which allows the SEZ Management authorities to ensure that illegal wildlife products are temporarily hidden. Law enforcement is believed to be aware of these circumstances and nonetheless turns a blind eye. Also, despite a series of legislative reforms undertaken by the Lao government, a specific challenge affecting the Golden Triangle SEZ lies in the continued uncertainty among authorities regarding jurisdiction issues. The lack of clarity provides an additional layer of murkiness to the dealings occurring within the area.

2.2 Recommendations

- **Design a regulatory environment conducive to transparent and adequately policed FTZs**. It is critical to adopt measures aimed at enhancing transparency and improving governance in FTZs and ensure that these areas continue to overwhelmingly perform the economic objective for which they have been legitimately created. This entails, in particular, the adoption of a sound regulatory framework resulting from the following actions:
    - Acceptance of Annex D of the Revised Kyoto Convention and compliance with the guidelines addressed therein on explicit customs jurisdiction over FTZs, rules on origin of goods, customs transit and transshipment procedures.
    - Authority for customs to exercise unrestricted rights to enter and observe day-to-day operations, audit records of companies in the zone, and validate goods status and compliance with tariff and non-tariff measures under the national customs mandate.
    - As many problematic FTZs frequently feature among the list of transit points, determination that goods in transit through FTZs are well within the scope of local law enforcement agencies.
    - Compliance with the standards enshrined in the OECD's Recommendation on Enhancing Transparency in Free Trade Zones, including the adoption of the Code of Conduct for Clean Free Trade Zones. FTZ operators are also strongly encouraged to actively participate in OECD-sponsored certification schemes that would serve to distinguish compliant and non-compliant FTZs.
    - Empowering regulatory bodies, for example health authorities, to inspect bonded warehouses located in FTZs to ensure that products being stored in such locations retain their integrity and do not enter the distribution system in the internal market of the State without being imported in accordance with the law of the State.
- **Implement strong operational measures to protect FTZs from illicit trade activity.** Specific measures notably include:
    - Conduct risk profiling of suspect shipments and ex-officio checks on goods stored and services conducted in FTZs.
    - Extend customs supervision to the FTZ perimeter as well as entry and exit points.
    - Validate the identity of FTZ's economic operators and their clients.
    - Implement "Know Your Customer" and "Due Diligence" measures.
    - Require that FTZ maintain and report on statistical data on goods entering and leaving their territory on the basis of their tariff classification and information that identifies the owner of goods.
    - Establish or designate a competent authority to issue licenses to manufacture, import, export, broker, or ship raw materials and other key inputs necessary for production within manufacturing and packaging facilities in FTZs. Such authority should also be responsible for renewal, suspension, and cancelation of the licenses, in accordance with national law.

3. Postal systems / express couriers

3.1 Findings

- Interviewed sources noted that illicit trade by small parcels is growing in significant volumes, in part due to the increase in online shopping, the proliferation of online marketplaces and e-commerce platforms. These may be subject to limited regulations or inadequate monitoring systems, making it easier for offenders to conduct illicit transactions below the radar.
- Illicit traders exploit the advantages of trading in small parcels, as they often evade detection by overwhelmed law enforcement agencies. Limited manpower and inadequate infrastructure and technologies hinder a thorough examination of the vast number of small parcels entering ports daily. Offenders exploit this oversight and take advantage of the lower risk of detection compared to larger shipments, which may undergo more stringent inspections.
- The verification process for small parcels is typically less rigorous than for larger shipments. Criminals can provide false or insufficient information when sending or receiving small parcels, making it easier for them to operate discreetly and avoid detection.

- Due to the combined effect of global social-distancing measures and travel restrictions in 2020 and 2021, several companies and law enforcement agencies reported a significant increase in the use of ecommerce platforms to illegally commercialize all types of goods. This has escalated the problem of illicit small parcels. This growth has outpaced the development and implementation of relevant legal and regulatory frameworks to effectively monitor and intercept illegal goods at the border.
- Illicit goods trafficked through small parcels is a complex problem, which differs postal carriers and express carriers.
    - Postal carriers: Traffickers exploit vulnerabilities in structural and institutional frameworks, and the weak IT infrastructure that is unable to adapt to the dynamic nature of illicit trade. The lack of electronic advance data (EAD), inaccurate information, and cumbersome processes to manually review consignment data create multiple points for fraudulent packages to enter the channels.
    - Express carriers: Express carriers have adopted systems that can provide EAD and implement effective track and trace solutions to remove suspicious packages, enabling them to be more effective partners with customs authorities. However, challenges remain in the quality/accuracy of information, expertise to identify certain categories of illicit goods including counterfeits, cooperation with law enforcement.
- While most sectors under review (except for oil, fisheries and beer, which are less susceptible to trafficking in small parcels) have been affected by illicit trade via small parcels, pharmaceuticals, fake Fast Moving Consumer Goods (FMCG) and luxury goods appear to be most impacted. The use of small parcels is particularly well-suited to counterfeit or otherwise falsified pharmaceutical products, as shipments of both raw active ingredients and completed products can be quite small, easily fit in bubble wrap letter packets and small boxes.
- A survey conducted by the Universal Postal Union (UPU), with the support of TRACIT, found a large number of postal operators reporting counterfeit goods as a major problem. In 2018, OECD noted that nearly 63 percent of customs seizures of counterfeit goods were in the form of small parcels.
- Counterfeit FMCG manufactured in China are proliferating through the rest of the world through small parcels. Brand owners report extreme difficulties by law enforcement agencies as counterfeiters use different logistics companies and express carriers to avoid detection and change packing so as not to be discovered by technology systems.
- Interviewed sources from Middle Eastern countries reported that FMCG are among the top three sectors where postal systems are used for illicit trade.
- Postal parcels were found to be the main conveyance method for fake leather goods shipped to the US and the EU.
- The postal channel remains a popular route for small parcels of counterfeit electronics goods. In 2016, around 7.3 million mobile phones and accessories in small postal parcels were intercepted and seized.

- In a UPU-TRACIT survey, postal operators noted there has been an increase in small parcel trade of illicit pesticides. This was more common in the Asia Pacific region, where postal authorities stated that illicit pesticides were often transported via postal channels. According to interviewed sources, the increase in illicit pesticide sales can be attributed to the growing shift towards online sales, where offline regulations are not effectively enforced or adhered to.
- In the food sector, the challenges of detecting illicit goods sometimes appear to be even greater. For example, it may be difficult to determine whether food items delivered by express couriers are toxic or unhealthy as a result of negligence or because they are fraudulent.
- National postal services are often used to transport illicit wildlife items – especially high value and live items. For example, small parcels are frequently used to transport tortoises and freshwater turtles.

3.2 Recommendations

- **Improve due diligence at points of entry.** Mail carriers should implement robust verification procedures at the point of collection and delivery of small parcels, including strict verification of national identity cards, business licenses if applicable, address and contact information. Further, mail carriers should ensure that there is proper adherence to customs documentation requirements for import and export. For example, for pesticides – proper registration certificates for the use of pesticides in the country of import should be required.
- **Encourage better collection and relay of electronic advance data (EAD).** By collecting and exchanging EAD, customs administrations have the opportunity to leverage the data supplied by the exporting mail carriers to facilitate advance customs decisions and more efficient customs processes. This allows the inbound customs administration to target items of interest in advance, while ensuring continuous flow of legitimate postal traffic. It could eliminate or at least reduce the need for a physical review of items with an advanced "customs release" decision (i.e., pre-clearance). To realize these benefits, it is crucial for:
    - Mail carriers to collect clear, accurate and complete data in prescribed (by the Universal Postal Union) formats for harmonized data collection and transmission to customs.
    - Mail carriers and customs administrations to develop or maintain IT systems that can effectively communicate with each other. This will allow customs to achieve greater effectiveness in data analysis and successfully target suspect parcels.
    - The joint UPU-WCO guidelines on the exchange of electronic advance data (EAD) between designated operators and customs administrations provides a good framework for EAD collection and relay.
- **Encourage cooperation with e-commerce platforms.** A significant proportion of the illicit trade in small parcels is fueled by consumers shopping online. As such, it is important for national posts and customs to work with e-commerce platforms:

- E-commerce platform operators possess large amounts of detailed information on the description of goods, value, vendors involved, consumers and histories of parties using the platforms. This information is critically useful for risk-assessment. There are, however, few agreements between authorities and online platforms to facilitate information exchange. E-commerce platforms, national posts and customs must create a mechanism that will easily permit data to be exchanged that can help risk profiling systems, EAD relay, and detection of repeat offenders.
- Mail carriers are encouraged to initiate pilot programs with e-commerce platforms to examine gaps in data collection frameworks and to understand the type of information that governments should be collecting to better target illicitly traded goods, including counterfeits.

- **Treat domestic warehouses and fulfillment centers that belong to e-commerce platforms as the ultimate consignee** for any good that has not been sold to a specific consumer at the time of its importation. By treating domestic warehouses and fulfillment centers as consignees, customs can enhance their ability to identify illicit goods, as well as use the support of other statutory and regulatory authorities to inspect suspect consignments that are in the possession of domestic warehouses and fulfillment centers.
- **Develop a Suspension and Debarment List.** The List should include entities and individuals who have repeatedly engaged in illicit trade practices.
  - Require national posts and express carriers to verify that their customers are not included in the List ahead of initiating any business transaction.
  - Deny services to those in business with people on the List.
  - Condition continued access to "trusted trader programs" on compliance with this verification process that determines whether a customer has been suspended or debarred.
  - Identify non-compliant national posts and express carriers that do not carry verification of those in the List and take necessary rectification actions.
- **Integrate customs screening and examination process into postal processing chains.** This will enable prompt inspection upon arrival to facilitate diverting packages for automated scanning of parcels.
- **Upgrade information technology (IT) infrastructure for screening.** New technologies powered with artificial intelligence, X-ray imaging systems, and other non-intrusive inspection techniques are increasingly proving to be more effective than physical inspection. These systems use several risk profiling data points to pinpoint suspect packages which can then be manually inspected by law enforcement. Technology support is crucial to assist law enforcement in screening the thousands of parcels that are traded across borders each day. Further, adequate technical training is required for border officers to enable them to make effective use of new technologies, particularly those that use big data analytics.
- **Encourage customs authorities to share information back to the carriers** to help them improve risk assessments and to blacklist clients that are repeat offenders.

II. LINKS TO ORGANIZED CRIME, CORRUPTION AND OTHER OFFENCES

1. Organized crime

- In all the sectors under review, organized criminal groups (OCGs) have proven to be extremely versatile with dynamic operations to meet the demand for illicit goods and exploit any possible avenue for profit generation. A recurrent theme is the sophistication of OCGs and their ability to engage in industrial-scale sourcing, transportation and sale of illicitly traded products across entire regions. The degree of OCG sophistication often goes hand-in-hand with the use of advanced laundering methods and the exploitation of legal companies to camouflage their illegal schemes.
- Another recurrent theme was the perception that legal frameworks remain patchy and efforts to prosecute cases involving illicit are not priority or courts are often unable or unwilling to hand down deterrent penalties.
- OCG involvement in illicit trade enables greater resources and access to technologies and expertise:
    - The production of counterfeit cigarettes requires the backing of elaborate criminal structures, with interviewed sources mentioning that criminal gangs often recruit former tobacco industry workers who possess the know-how and experience to manufacture tobacco products. Interviewed sources also report criminal gangs managing to illegally obtain used equipment and machinery to produce tobacco.
    - Given the strict requirements in place for the production and commercialization of alcoholic beverages worldwide, counterfeiters need the backing of OCGs to bring illicit products to markets.

- The sophistication of networks active in the EU is visible in the accuracy with which counterfeit medical products are assembled to make them look genuine, including the replication of security features such as holograms.
- One of the best-known examples of OCG involvement in food fraud is the production of fraudulent olive oil, particularly the extra-virgin variety, which requires use of mechanical processes with no solvents or similar aids.

- Although the exact magnitude of OCG involvement in illicit trade in the sectors under review remains elusive, some of the figures collected during this study exemplify the width and depth of OCGs' infiltration in the illegal economy. For example:
  - In Mexico, criminal groups with tapping skills were reportedly able to drain USD 90,000 worth of refined gasoline in less than seven minutes, making fuel tapping even more lucrative than narcotics trade.
  - In February 2019, Europol supported an operation coordinated by the Italian Carabinieri against an OCG that counterfeited at least 11,000 bottles of Italian red wine.
  - According to the U.S. Federal Bureau of Investigation, Russian, Chinese, Italian and African OCGs move colored gems across international borders to avoid customs duties or taxes. Russian OCGs are able to extract and sell more than 300 metric tons of amber a year, worth more than USD 1 billion.
  - According to the Sao Paulo Attorney General's Office, an OCG specialized in the counterfeiting of pesticides sold more than USD 34 Mio in a period of 28 months.
  - Based on research for this report, OCGs are involved in all sectors and all nodes of the supply chains, from production to distribution to end-users/ consumers. Their involvement in IUU fishing has been observed in all types and jurisdictions. Similarly, the presence of OCGs has been reported in almost all law enforcement operations where illicitly traded cigarettes have been found, including large-scale operations and those involving small cargoes.
- The initial phases of the Covid-19 pandemic—characterized by stringent social distancing measures and discontinuances in distribution flows—has created challenges and opportunities for OCGs. On the one hand, some criminal syndicates saw their cross-regional activities damaged by global lockdown-driven supply chain interruptions. One the other hand, the sudden shift in priorities for law enforcement agencies, whose resources shifted to enforcing lockdowns, left illicit trade operations significantly less policed. This substantially lowered the risks for OCGs and provided favorable circumstances to launch into new illegal businesses.
- In terms of types and nature of criminal networks involved, this study has revealed a wide spectrum of groups, ranging from loosely organized networks, sometimes made up of just a few individuals, to highly structured syndicates. Regarding counterfeit products in general, growing evidence suggests that most high-quality counterfeits are produced and distributed by large, sophisticated OCGs who also manage the international shipping protocols.

- Some of the research studies reviewed for this project have enabled a better understanding of the features and dynamics of criminal networks in specific sectors. For example:
    - A 2020 report by the Financial Action Task Force (FATF) on the illicit trade in wildlife has highlighted that syndicate leaders of large-scale criminal networks are often not involved in sourcing the wildlife themselves. Instead, they rely on local controllers based in source countries who oversee the illegal sourcing of the wildlife from various local poachers, breeders or farmers. Syndicates often choose local controllers who have unique local knowledge or language skills and can hide their financial activities behind the pretense of legitimate business in the country.
    - Research conducted into criminal networks exploiting markets for precious metals and gems in South Africa revealed at least five layers of criminal actors involved at different levels of the illegal supply chain, potentially suggesting that similar structures are also present and active in other parts of the world. These layers involve: (1) Illegal miners and mine employees; (2) middlemen and direct buyers of mine products; (3) Bulk buyers; (4) Owners of front companies re-packaging the products with the aim of hiding their origin and prepare them for international shipping; (5) International networks shipping to overseas destinations through use of false documentation.
    - Regarding the illegal agri-food business, recent research has emphasized the involvement of legitimate actors that are "endogenous" to food supply chains, with food criminality often been committed by corporate criminal players portraying legitimate entrepreneurs. This challenges the common narrative whereby food related crimes are exclusively perpetrated by so called "agromafie," traditional mafia-type actors.
- The inadequacy of local regulatory framework represents an important factor directing OCGs towards certain markets or geographical areas. The present study highlighted a number of regulatory frameworks and policies whose deficiencies are arguably creating a favorable ground for criminal syndicates to operate. These include:
    - Excessive, unbalanced excise tax regimes.
    - Loose regulations on food products. In countries such as the US, the risk of being sanctioned is lowered by the fact that labels such as "extra virgin" are not as tightly regulated as in European countries, which restricts the ability of law enforcement/inspection authorities to intervene. As a result, it is estimated that, in the US market, 75-80 percent of the "extra virgin" olive oil imported from Italy is not truly extra-virgin.
    - Discrepancies across countries in access controls and quotas regimes for legal trade.
    - Decentralized and insufficiently regulated distribution channels, especially in developing countries characterized by markets' informal nature.

- A recurrent concern is that the domestic penalty regimes applicable to illicit trade related conduct do not provide sufficient deterrence, which creates a low-risk, high-reward environment for traffickers. In countries such as Panama and Paraguay, for example, the valuation of an illicit cargo of tobacco needs to be significantly high (e.g., more than 500.000 USD) to give rise to a criminal offence. As a result, most suspicious cargoes are investigated for customs fraud or other administrative offences, which normally carry low penalties and do not permit the use of special investigative techniques. Hence, investigations rarely seek to identify the criminal network behind an aborted illicit trade operation.
- Loosely implemented trade related prohibitions, scarce resources available to law enforcement agencies, and lack of training on detecting illicit consignments multiply the black-market opportunities for criminal organizations.
- In some cases, illicitly traded goods can be easily hidden or intermingled with others, frustrating efforts at detecting illegal consignments. In the forestry sector, for example, paper and pulp are particularly interesting products from a transnational organized crime perspective because once they have been processed, it is very difficult and expensive to determine their illicit origins (in contrast to roundwood where species and origins can more easily be identified).
- Several interviewed sources report instances where the same OCGs were involved in illicit trade schemes for multiple types of goods. Poly-criminality appears to be the result of opportunities offered by the same geographical and or/ socio-economic context. In oil-rich regions, for example, OCGs are often involved in a variety of operations ranging from ship piracy to stealing tanker cargoes to kidnapping crews. The proceeds of oil theft frequently end up financing other criminal activities, triggering violence within local communities. There are also several reported instances of illegal mining being associated with trafficking of explosives used to commit other crimes.
- OCGs may also engage in different illicit trade sectors simultaneously when the manufacturing processes require the same sets of skills, or the distribution channels involve the same means of transport or routes. These findings confirm trends identified by Europol in 2021, whereby criminal groups in the EU were discovered using the same transportation methods to traffic drugs, stolen vehicles, car parts, and illegal migrants.
- There is evidence that several OCGs engaged in illicit trade in one or more of the sectors covered by this study are also engaging in drug trafficking. This was reported to be the case of major wildlife crime syndicates. Also, the Australian Criminal Intelligence Commission mentioned criminal cartels using illicit trade in tobacco as a platform for further illicit activities, including drug importation. In Central America, narco-cartels regard illegal oil trafficking as a means to diversify their portfolio of activities and as a less risky business than drug trafficking. Some drug-cartels in Latin America have also been identified posing as precious-metals traders by purchasing gold and selling it abroad via front companies. In this case, profits from the cocaine trade represent seed money for these organizations to engage in the illicit trade of precious metals.

- Policy discourses around illicit trade increasingly incorporate a "security" component. For example, illicit trade is increasingly seen as a global channel for the financing of terrorist activity. For the first time in 2015, anti-illicit trade efforts have been recognized in a legally binding Security Council resolution as key components in the global fight against international terrorism.
- A recurrent concern lies in the observed connection between organized criminal groups involved in illicit trade activities, local militias and armed conflict. These links have been detected in relation to several illicit trade sectors under review and various geographical areas. For example:
    - In Africa, the illicit trade in wildlife has been reported as a source of funding for terrorist organizations including Boko Haram, Al-Shabaab and the Lord's Resistance Army, although the scale of the linkages between this type of illicit trade and the above-mentioned groups remains undetermined. Al-Shaabab militants have also been associated with the lucrative sugar smuggling business in the Kenya–Somalia borderlands. In the Central African Republic, the violent armed groups that still control large diamond-rich areas in the country may still be profiting from the sale of diamonds which eventually reach international markets. Generally speaking, illegally mined or traded diamonds and gold are being used by criminal groups as alternative currency to trade in other illicit goods, such as guns and drugs, and to fund rebel groups, militias and armed gangs.
    - In South America, the triple border between Argentina, Brazil and Paraguay remains a hotspot for criminal activity of various types. Whereas all types of illicit trade take place and/or originate in this area, the US Drug Enforcement Administration has reported that groups such as Hezbollah have engaged in tobacco smuggling activities with the help of notorious criminal groups. Reportedly, also, terror cells from Al-Qaeda have had a presence in Ciudad del Este (Paraguay) since as early as 2002.
    - Illegally supplied oil, gas, gasoline and diesel sales account for 20 percent of the income of non-state armed groups in conflict situations. In 2014-2015, the illicit trade in these commodities represented the biggest source of income for Islamic State.
    - Law enforcement sources reported that the weapons used in the attack on the Charlie Hebdo offices in Paris were partially financed through the sale of counterfeit items.
    - In 2023, it was reported that in Mindanao, Philippines, several armed factions previously linked to kidnapping for ransom and other serious criminal activities, are now responsible for the surge in domestic cigarette smuggling.
- Interviewed sources and desk research confirmed that illicit trade operations often feature ruthless OCGs physically exploiting and resorting to violence and threats against workers employed in clandestine factories. Other forms of violence include hijacking, such as the case in Mexico where OCGs are known to hijack entire convoys of trucks transporting legitimate products such as alcoholic beverages. Also, OCG involvement in the illicit trade in precious stones and gems often takes the form of extortion of both legal and illicit mining operations.

2. Corruption

- Research and academic studies, law enforcement reports and sources interviewed for this study consistently emphasized the role of corruption in advancing illicit trade schemes in all the sectors under examination. Against this backdrop, interviewed sources mentioned that the very nature of corruption-related offences, characterized by secretive agreements between those involved, make this type of crime particularly challenging to detect and investigate. Under the broad umbrella of corruption, a variety of economic crimes are committed in the illicit trade space, ranging from bribery to misappropriation of funds, abuse of office and loyalty payments.
- Corruption levels can be particularly high in countries with heavy regulatory frameworks and weak institutions. For instance, many Latin American and former Soviet countries suffer from widespread corruption and ineffective regulatory systems, which contribute to the development of large informal economies.
- In developing countries, lack of proper remunerations for public officials with various responsibilities towards illicit trade mitigation has been commonly blamed for increased corruption levels. At the same time, in 2021 Europol reported that the role of corruption has been largely underestimated in developed countries. Europol notably observed that criminal networks have infiltrated transport infrastructure across the EU.
- The supply chains along which illegally trade goods typically move offer numerous "entry points" for corrupt behavior involving different categories of public-sector actors. These range from border/customs officials to regulatory and inspection bodies and criminal justice officials. Corrupt behavior in the judicial system has also been linked to decisions to drop prosecutions, acquittals or light penalty sentences to which traffickers are convicted at the end of criminal proceedings.

- Bribes are typically offered to border/customs officials in exchange for allowing goods to pass through, or to accompany the goods through checkpoints to avoid scrutiny. Multiple reports detail how traffickers often corrupt border/customs officials to move their shipments from ports and across borders. Sector-specific examples include:
    - In 2002, a South Africa-based fishing company was convicted on 301 charges of bribery of fisheries inspectors.
    - In most Western African countries, the illicit trade in tobacco products is facilitated by high levels of corruption among customs officials. According to interviewed sources, the border police of the receiving countries are particularly open to receiving bribes to allow the entry of undeclared tobacco products.
    - A study of contraband of gold in the Ugandan Great Lake Region concluded that illicit exporters had various informal arrangements with Entebbe airport security officials in order to facilitate the smooth export of illicit gold.
- In addition to revealing instances of corruption of public officials at strategic airports and transport hubs, Operation Dragon – a two-year investigation launched by the Wildlife Justice Commission – documented which ports were reported to be "easier" to move products through. The identified corruption schemes were designed to ensure that smuggling operations unfold smoothly without the risk of detection. The investigation also highlighted how, in several instances, the cost of doing business with traffickers included the cost of corrupting local officials. Although it focused on the illicit wildlife trade in Southeast Asia, Operation Dragon illustrates some dynamics that appear to be common in other geographic areas as well.
- Beyond customs/border officials, other law enforcement officials may be involved in corrupt schemes at various nodes of the supply chain. For example:
    - In the lumber production chain, officers are bribed to turn a blind eye to trucks transporting illicit lumber.
    - Law enforcement officials (as well as security guards) may be actively involved in oil theft to ensure traffickers can operate under the radar. In Nigeria, for example, members of the armed forces have reportedly accepted bribes in exchange for turning a blind eye to illegal activity and protecting oil traffickers' access to extraction points from rival criminal gangs.
    - Law enforcement authorities may be bribed to prosecute members of competing criminal organizations.
- This study collected several illustrations of corruption schemes involving regulatory and inspection agencies. For example:
    - In the precious metals and gems sector, there are many opportunities for fraud and corruption related to shady procurement processes, loopholes in national regulatory frameworks, and fraudulent licensing and permitting.

- Investigations in Punjab (India) into the role of illicit pesticides during the 2015 "whitefly" devastation of cotton crops resulted in arrests and charges of cheating, criminal breach of trust and criminal conspiracy against several prominent agricultural officials. Serious irregularities in the purchase of subsidized pesticides for distribution to farmers were reported, and large sums of money were seized from the home of the Agriculture Director, who allegedly overcharged the government for subsidized pesticides and accepted bribes to renew contracts for product licensing without a proper tendering process.
- In the forestry sector, illegal loggers use false documentation and bribery to obtain logging permits. In other cases, timber certifiers can be paid off to "whitewash" illegally sourced logs.
- Reports analyzed in relation to the illicit trade in pharmaceutical products point to regulators receiving kickbacks to turn a blind eye to illicit manufacturers or to grant licenses to manufacturing facilities that implement sub-standard practices. Bribery can involve wholesalers and distribution centers, providing another entry point for substandard and counterfeit drugs to pollute the supply chain.

- Corrupt practices may take different forms depending on the regulatory structure of the industry sector under consideration. The forestry sector, for example, is closely linked to the government, with global forest ownership and forest management largely dominated by government ownership and the transfer of access rights and management authority to large-scale private companies through logging concessions. This creates significant incentives for corruption and manipulation of the public forestry administration. In this regard, Interpol estimates the annual global cost of corruption in the forestry sector to be about USD 29 billion. Government officials, including CITES Management Authorities are able to make illegal timber look legal with a single piece of fraudulent documentation.
- Interviews conducted for this study and sector-specific reports indicate the pivotal role often played by corporate insiders in exchange for bribes. This is particularly evident in the oil sector, where current or former employees of oil companies act collusively with traffickers to provide technical knowledge of stations or locations of pipelines from which to siphon oil. Employees of oil-related infrastructure often play a critical role in enabling pipeline tapping by oil thieves. Another area where indications of insider collusion were gathered is the pharmaceutical sector. A seminal study conducted by Transcrime on the theft of medicines from Italian hospitals highlighted how OCGs redirect funds to bribe medical staff of hospitals or to pay underground couriers to divert the medicines.

3. Money laundering

- Financial gain is the overarching motivation underlying the involvement of OCGs in illicit trade operations involving all the sectors under review. As a result, money laundering enables traffickers to distance themselves from the crimes committed and use the proceeds for other operations. This illegal activity is facilitated by the fact that most institutional efforts to mitigate illicit trade and prosecute related offenders neglect the "follow-the-money" component.
- Proving money laundering offences requires the launch of financial investigations, which is often a time- and resource-consuming activity. Money laundering schemes have been found to pursue one or more of the objectives below:
    - Introduce proceeds into the legal economy. The financial windfall that organized criminal networks reap from engaging in illicit trade schemes allows them to organize, finance and diversify their activities, including by investing illicit proceeds in established legal businesses. This also enables them to present an appearance of legitimacy and respectability, which in turn fuels their credentials and further facilitates their infiltration in countries' economies and social fabric.
    - Re-invest proceeds in the same illegal business with a view to sustaining and extending it. For example, proceeds from IUU fishing are often "cleaned" by re-investing them in the same sector for the purchase of fishing infrastructure (e.g., new gear, fish processing equipment, vessels), or to sustain the cost of new fishing expeditions. Proceeds may additionally be re-injected into source countries to cover the ongoing costs of criminal activity (e.g., costs for shipping loads or vehicles).
    - Use proceeds to engage in parallel or new forms of illicit trade.
- In some instances, proceeds generated from illicit trade reportedly contribute to terrorist/extremist activity. This has been the case, for example, of the "maras" criminal group in Central America, which has allegedly been involved in financing terrorism through proceeds from illicit alcohol.

- The examples collected and the interviews carried out for this study have shed light on the scope and magnitude of some money laundering operations. For example, while it remains very challenging to come up with an accurate measurement, including because criminal networks often comingle illegally traded wildlife with large flows of legal trade, proceeds in this domain have been estimated globally at between USD 7 and 23 billion per year. Throughout Latin America, billions of euros are being laundered out of petrol stations.
- In terms of actors involved, law enforcement operation "Petrol-Mafie SPA" revealed the involvement of Italian mafia groups in illegal schemes in the oil sector, together laundering over USD 200 million. At the same time, "white collar" actors (e.g., lawyers, notaries, accountants, real estate agents) intermediaries that traffickers use to design the complex financial architectures (e.g., shell companies, trade-based money laundering schemes) needed to hide money trails.
- Intermediaries in the money laundering field may act collusively with an insider – such as a corrupt branch manager or other mid-level bank employee – to personally ensure that illicit transactions going through the banking circuit are not detected by internal compliance mechanisms designed to identify and block suspicious transactions.
- Activities aimed at disguising the illegal origin of proceeds appear to be greatly facilitated by the cash-intensive nature of certain types of illicit trade. For example:
    - In the case of IUU fishing, cash transactions play a prominent role in bribing port officials.
    - In the illicit oil market, criminal networks often rely on foreign banks to launder or store their illicit profits, including bulk cash smuggling, delayed deposits and cycling cash through legitimate businesses and cash purchases of luxury goods.
    - Reports indicate that individuals who need to launder cash, especially those involved in organized crime, are often prone to engage in the cash-for-gold business. This latter can provide a continuous supply of untraceable gold commodities from various sources, allowing for falsification of source and blending of licit and illicit supplies.
- Money value transfer systems are reported as alternative mechanisms for money laundering purposes as they avoid the formal banking system and associated financial traces. A 2020 FATF study mentioned these informal schemes, such as Hawala, as a channel that draws on networks of brokers across countries and enable actors in the illegal wildlife trade to execute international transfers without money physically crossing borders.

4. Forced labor

- As highlighted by the interviewees and in the research conducted for this report, amongst the worst crimes associated with illicit trade is the demand it creates for forced and child labor in illicit trade. A key reason why human rights and labor rights abuses are found throughout illicit trading sectors is because of illicit traders' ruthless pursuit of profits through the relatively lower cost – or no cost at all – of such labor, in terms of both compensation and benefits.
- Contrary to legal enterprises that operate in the open, and where transparency facilitates oversight of employee rights in the supply chain, illegal actors operate in the dark at the expense of those most vulnerable to abuse, including children, women, and migrant workers. The European Commission captured this situation in pointing out that while "reputable companies that manufacture abroad respect [labor standards], dealers in fake goods don't have reputations to protect and can mistreat workers – even children, forced to work in sweatshops – as much as they like." Similarly, UNODC outlines that instances such as threats of violence, exposure to hazardous materials, and deadly working conditions are much worse for workers in a clandestine setting – such as those in counterfeiting operations – compared to "global companies whose supply-chain practices are at least open to some degree of scrutiny."
- The findings in this report indicate that forced labor is a widespread phenomenon across most sectors under review, with incidents of forced labor reported all along the illicit supply chain – from upstream agriculture harvesting and minerals extraction to counterfeit manufacturing and tampering further downstream.
- Illicit traders typically play off the fears of child, migrant and forced workers to reduce the risks of law enforcement detection of their illegal enterprises. For example, individuals in forced labor conditions are reluctant to alert authorities as they may be subject to further threats and violence by those who exert control over them. Also, by stepping out of the shadow, forced laborers expose themselves to the risk of deportation.

- This report illustrates how eight sectors of illicit economic activities act as a source of demand for forced labor. These activities include the illegal supply chains for: (i) pesticides; (ii) alcohol, (iii) counterfeit apparel, footwear and luxury goods; (vi) forestry products, (v) pharmaceuticals, (vi) precious metals and gemstones, (vii) tobacco products, and (viii) wildlife.
    - Illegal pesticides are both produced and used by forced laborers, putting workers' health and well-being at serious risk from the forced handling of toxic chemicals. Few workers dare to speak out against abuse since those who do are threatened, beaten, or even killed. Interviewed companies highlight the links between illicit trade in pesticides and labor violations, with several recent cases from Italy and Turkey as examples.
    - In conversations on illicit alcohol, interviewed companies confirm that children have been observed working in the illicit production of counterfeit alcohol, including the refilling of bottles with surrogate and substandard products and/or the tampering of legitimate products. The illegal use of minors has also been detected in relation to the production of home-brew and artisanal beverages in significant quantities and intended for its illegal commercialization. Also, in Latin America, companies have reported that local violent gangs frequently recruit adolescents and children to collect empty bottles of genuine brands, which are later refilled with counterfeits and surrogate alcohol.
    - The findings of this report highlight numerous examples where potential victims of forced labor have been identified in connection with counterfeiting apparel, footwear and luxury goods. These findings are echoed by a study by the UK Intellectual Property Office, showing "People Trafficking/Modern-day Slavery" among the top ten crimes associated with intellectual property crimes.
    - In the illegal forestry sector, labor abuse includes threats, violence, poor living and working conditions, a lack of formal contracts, and non-payment of wages. In sawmills, workers may have to work excessive and unpaid overtime while having their documents retained and movement restricted. By some estimates, up to 50 percent of illegal logging globally is dependent on forced labor.
    - Illicit pharmaceuticals is another sector where there is significant exploitation in the form of forced labor, with abuse likely having increased in the wake COVID-19 and the resulting uptick in fake products and remedies entering the market. For example, in the UK it was reported that fake masks were often manufactured in unsterile sweatshops previously used to make fake handbags or designer jeans."
    - Mines extracting precious metals and gemstones are typically located in remote areas where governments lack the capability to monitor conditions and enforce laws – including, notably, labor laws, thereby significantly increasing risk of forced and child labor. In the DRC, where illegal mining represents one of the most abusive and dangerous places to work in the world, children make up an estimated 40 percent of the miners as they are physically small enough to climb into tiny mine shafts.
    - In the illicit trade in tobacco products, criminals go to great lengths to stay undetected and keep costs down – with slave labor being a vital component in this.

III. INTERNATIONAL POLICY, REGULATORY AND LAW ENFORCEMENT RESPONSES

- Illicit trade is widely regarded by global governance bodies as a serious problem affecting multiple private and public interests and representing a significant obstacle to economic and social development. In response to these challenges, several Inter-Governmental Organizations (IGOs) engage in various forms of anti-illicit trade activities. Some sectors are clearly "dominated" by one IGO with a deeper or more comprehensive "offer" of tools (e.g., WHO in the pharma sector, FAO in the agri-food sector). By contrast, other illicit trade areas see multiple IGOs involved, although seldom in a coordinated manner. This is the case, for example, of the pesticide sector where regulatory standards have been set by the United Nations via the Basel, Rotterdam and Stockholm Conventions, FAO through the International Code of Conduct on Pesticides Management, and the OECD Recommendation on Countering the Illegal Trade of Pesticides.
- In view of its open-ended mandate to promote global peace, security and sustainable development in the social and economic fields among its 193 member States, the United Nations (UN) deals with multiple illicit trade sectors. The role of the UN in tackling illicit trade is spread over several offices and programs addressing the subject-matter from multiple angles and perspectives, either by way of direct mandates received from the Organization's governing bodies, or indirectly through the implementation of other policies loosely connected to illicit trade. Among the sectors under review, the UN has adopted specific regulatory instruments in at least 5 areas, namely: Agri-food (Guidelines for Consumer Protection), fisheries (Convention on the law of the sea and various fish- and port-related agreements), PMG (Kimberley Process), pesticides (Basel, Stockholm and Rotterdam conventions), wildlife (CITES).
- In addition to the UN, regulatory responses to illicit trade are found in the work of several of its specialized agencies. The consequent "compartmentalized" approach to illicit trade reflects the structure of the international community's policy-making bodies whereby the mandate of each specialized entity is limited to certain thematic areas. Also, the content and "style" of the resulting measures and guidelines reflect the specific mandates, cultural settings and expertise of individual agencies. Moreover, most legal standards and policy recommendations are only addressed to specific categories of stakeholders.
- Although only a limited amount of "cross-cutting" work is carried out by relevant IGOs – either in the form of shared resources or shared recommendations – the present study has highlighted a few interesting examples of international bodies joining forces and establishing partnerships to handle illicit trade areas simultaneously tackled by two or more organizations. This reflects ongoing efforts to reduce the impact of disjointed – and potentially contradictory – approaches with a view to promoting coherent and mutually supportive workstreams.

- A leading example of inter-agency initiatives covering a specific sector under review is the International Consortium on Combating Wildlife Crime (ICCWC), a collaborative effort among the CITES Secretariat, Interpol, UNODC, the World Bank and the WCO for the protection of wildlife species against illicit trafficking and other crimes. ICCWC works directly with frontline officers from national agencies responsible for wildlife law enforcement and criminal justice authorities by building long-term capacity and providing them with the tools, services and technical support needed to combat wildlife crime.
- Of all the sectors under review, oil and forestry have been the object of comparatively few regulatory initiatives by IGOs. Except for the EU Timber Regulation, the existing mechanisms under international law relevant to the illicit timber trade are, for the most part, agreements designed to protect the environment and encourage the sustainable use of natural resources. Compared to other industry sectors, there is a paucity of international responses specifically focusing on the illicit oil trade. Most initiatives concentrate on the environmental damage caused by oils spills into the maritime domain, but not whether these occur as a result of illegal operations. This does not mean that the oil and forestry sectors fall outside any regulatory effort. Cross-sectoral instruments such as the FATF recommendations, or WCO's SAFE Framework of Standards to Secure and Facilitate Global Trade do apply to illicit trade occurring in both sectors, although they were not designed for them specifically.
- Several policy, regulatory and law enforcement initiatives have been taken at the regional level, the most prolific IGO in the field being the European Union (EU). EU programs dealing directly with illicit trade are numerous and heterogenous. The EU intervenes in various ways: As a regulator with the setting of soft or legally binding requirements for its 27 member states; as incubator of new ideas and policy processes; and as a sponsoring and funding agency. In addition to devoting resources on specific illicit trade sectors, the EU addresses the phenomenon indirectly through its various bodies (European Commission, Europol, Eurojust, OLAF) by carrying out activities aimed to harmonize legislation on crime issues across member states and coordinate national law enforcement responses.
- While the present study has focused on initiatives taken at the international level in specific illicit trade sectors, other instruments address illicit trade on a genuine cross-sectoral basis. The TRIPS Agreement, for example, is relevant to all the sectors under review to the extent that IP violations are concerned. Similarly, OECD promotes recommendations to reduce vulnerabilities of FTZs against all forms of illicit trade. It should be kept in mind, also, that certain instruments, programs and policies have an impact on the overall illicit trade mitigation effort although they may not have been elaborated to tackle illicit trade as such. This is crucially the case of the corpus of international treaties, tools and follow-up mechanisms adopted to tackle corruption, organized crime and money laundering within the UN system and various regional organizations.

- The tools developed by the IGO community that appear to be especially relevant for the sectors under review are a mix of binding legal instruments, "soft laws" and other products and mechanisms. In particular:
    - International treaties – adopted both at the global and regional level – most of which have been in force following ratification by the vast majority of UN member states.
    - Recommendations and guidelines, often adopted to facilitate the implementation of relevant international treaties by states parties.
    - Coordination mechanisms and platforms to enhance information exchange within the law enforcement community (e.g., WCO-CEN, INTERPOL I/24/7). These include various databases gathering information received from Governmental authorities (normally on a voluntary basis unless the information-gathering exercise is prescribed by a binding treaty provision).
- A comparative examination of recommendations issued by different IGOs in the various sectors under review shows a significant number of overlapping features. In particular, the referenced IGOs commonly:
    - Highlight the close links between illicit trade and organized crime and the critical role that corruption plays as a key enabler.
    - Call for the establishment of inter-ministerial task forces/ units coordinating the response to specific manifestations of illicit trade.
    - Support industry engagement as a critical partner to assist in illicit trade mitigation efforts, including by emphasizing the need to protect supply chains through the adoption of enhanced due diligence and "know your customer" processes.
- An important component of IGOs action is directed towards assisting member states in the implementation of international treaties in specific sectors. In particular:
    - There is no "treaty" devoted to tackling illicit trade across the board.
    - Among existing treaties, none contain sections or provisions dealing with illicit trade across sectors.
    - The existing "sectoral" treaties have been negotiated at very different times by different IGOs and for this reason are not homogeneous either in structure or content.
    - While some existing treaties reference the latest technological solutions to prevent illicit trade (e.g., the Tobacco Protocol), others are at risk of becoming obsolete as they were adopted at times when market channels as well as illicit trade dynamics were profoundly different from today.

- In terms of IGO-coordinated law enforcement responses, important cross-sectoral platforms and information-sharing mechanisms have been adopted by WCO and Interpol. This study has highlighted a number of international law enforcement operations in various sectors under review. Operation Pangea, for example, is a well-established Interpol-led effort to disrupt the advertisement, sale and supply of illicit medicines and medical devices threatening worldwide public health and safety. Interpol's Operation Opson targets illicit food and drink.
- Various law enforcement and information-exchange initiatives have been taken at the regional level. Throughout 2019, for example, Europol supported an operation which saw law enforcement authorities from 23 EU Member States exchanging intelligence on modus operandi, routes, products and economic operators involved in fuel fraud schemes. Europol specifically contributed by facilitating international cooperation between national authorities, cross-checking data against Europol's databases and providing analytical support. Also relevant for the oil sector, ReCAAP has focused part of its information sharing and capacity building efforts in Southeast Asia on preventing and countering ship hijacking for the purpose of fuel theft. Also worth noticing is ASEAN Single Window (ASW), a collective effort within the region that links and harmonizes the National Single Window (NSW) systems of ASEAN Member States. The main goal of ASW is to accelerate the process of clearing cargo and foster economic unity in the ASEAN community by facilitating the digital exchange of cross-border trade documents among member countries.

Table I: Internationally adopted standards

The Table provides a snapshot of regulatory standards (both binding and non-legally binding) that individual Inter-Governmental Organizations (IGOs) have adopted in the illicit trade areas under review, including those of a cross-sectoral nature. The information provided does not claim to be exhaustive list, but rather provide a list of key regulatory initiatives referenced/highlighted in the present study. The Table does not reference tools in the form of awareness-raising/training materials, situational reports/studies nor existing platforms for operational/ law-enforcement information exchange.

	ALCOHOL	AGRI-FOOD	FISHERIES	FMCG, COSMETICS, LUXURY AND ELECTRONIC GOODS	FORESTRY	OIL	PHARMA	PRECIOUS METALS AND GEMS	PESTICIDES	TOBACCO	WILDLIFE
United Nations	Guidelines for consumer protection	Convention on the Law of the Sea GA Resolutions on sustainable fisheries Fish Stocks Agreement Port State Measures Agreement						Kimberley Process	Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and their Disposal Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade Stockholm Convention on Persistent Organic Pollutants		Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)
UN Specialized agencies											
IMO			Djibouti Code of Conduct			Djibouti Code of Conduct					Djibouti Code of Conduct Guidelines for the Prevention and Suppression of the Smuggling of Wildlife on Ships Engaged in International Maritime Traffic

	ALCOHOL	AGRI-FOOD	FISHERIES	FMCG, COSMETICS, LUXURY AND ELECTRONIC GOODS	FORESTRY	OIL	PHARMA	PRECIOUS METALS AND GEMS	PESTICIDES	TOBACCO	WILDLIFE
UN Specialized agencies (cont.)											
FAO		Codex Alimentarius	Agreement to promote Compliance with International Conservation and Management Measures by Fishing Vessels on the High Seas (Compliance Agreement) Code of Conduct for Responsible Fisheries Voluntary Guidelines for Flag State Performance Voluntary Guidelines for Catch Documentation Schemes						International Code of Conduct on Pesticides Management		
WHO	Global Strategy to Reduce the Harmful Use of Alcohol	Convention on the Law of the Sea GA Resolutions on sustainable fisheries Fish Stocks Agreement Port State Measures Agreement					Guidelines for the Development of Measures to Combat Counterfeit Drugs International Medical Products Anti-Counterfeiting Taskforce (IMPACT) Global Surveillance and Monitoring System			Framework Convention on Tobacco Control (FCTC) and Protocol to Eliminate Illicit Trade in Tobacco Products	
Other IGOs											
WCO	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade	SAFE Framework of Standards to Secure and Facilitate Global Trade
WTO	Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)	Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)		Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)			Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)		Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)	Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)	

	ALCOHOL	AGRI-FOOD	FISHERIES	FMCG, COSMETICS, LUXURY AND ELECTRONIC GOODS	FORESTRY	OIL	PHARMA	PRECIOUS METALS AND GEMS	PESTICIDES	TOBACCO	WILDLIFE
Regional IGOs											
OECD	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High-Risk Areas	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones Recommendation on Countering the Illegal Trade of Pesticides Best Practice Guidance to identify Illegal Trade of Pesticides	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones	Recc. on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones
Council of Europe	Trademark Regulation (2015/2424) Trademarks Directive (2015/2436)	Food safety legislative and policy framework	Regulation to Prevent, Deter and Eliminate Il Fishing	Trademark Regulation (2015/2424) Trademarks Directive (2015/2436)	Timber Regulation Voluntary Partnership Agreements		Falsified Medicines Directive Trademark Regulation (2015/2424) Trademarks Directive (2015/2436)	Conflict Minerals Regulation	Trademark Regulation (2015/2424) Trademarks Directive (2015/2436)	Strategy on stepping up the fight against cigarette smuggling and other forms of illicit trade in tobacco products	Wildlife Trade Regulations
ECCAS/ ECOWAS			Yaoundé Code of Conduct			Yaoundé Code of Conduct					Yaoundé Code of Conduct
RFMOs		Different agreements on managing fishing activities in the high sea									

IV. PRIVATE-SECTOR INITIATIVES AND PUBLIC-PRIVATE PARTNERSHIPS

- With a view to mitigating the risk of illicit trade affecting or disrupting their supply chains, interviewed or referenced companies adopt a varying mix of strategies, policies and operational measures depending on resource availability, the specific features of their products, supply chain characteristics as well as geopolitical and socio-economic factors.
- The present study has shown that increasingly companies' actions to secure their supply chains against illicit trade in the sectors under review is part of all-encompassing corporate strategies to attain a series of intertwined objectives, which typically include:
    - Projecting a positive image of the company itself as a responsible actor, with the medium- and long-term objective to increase market shares and profits.
    - Reducing exposure to both legal and reputational risk, thus minimizing supply chain monitoring costs.
    - Ensuring that the final products are unsafe to end customers.
    - Enabling consumers to make informed purchasing decisions, (e.g., knowledgeable about the true identity and origin of a certain product/the raw materials used to manufacture it).
- Corporate policies to insulate supply chains from illicit trade often go hand-in-hand with a wide spectrum of efforts aimed at mitigating the risk of human rights abuses, forced labor practices, corruption, money laundering and other externalities that broadly stand in the way to the achievement of the UN sustainable development goals. These policies are often encapsulated under the broad notion of "responsible supply chain management".
- Corporate commitments are often initially outlined in formal pledges. These consist of publicly stated goals to eliminate/mitigate illegally sourced products from their operations, either associated with specific commodities and/or regions, or across entire supply chains. These pledges often involve a vision of change, while not being specific on implementation, criteria and timelines. Pledges are frequently intended for the public at large and address global issues. For example, a wave of major corporations has stepped forward in the last decade with voluntary pledges to address illegal deforestation, initiated and supported by leading industry and multi-stakeholder groups like the Consumer Goods Forum (CGF) and Tropical Forest Alliance 2020.
- To provide more granularity and operationalize the principles expressed in their formal pledges, several companies employ codes of conduct. These are tailored to a specific company's needs and set internal policies and requirements for production and sourcing practices. Codes of conduct may outline requirements for suppliers to establish and maintain business relationships with the company and be supplemented by specific sourcing policies and standards. At the same time, codes

of conduct often limit themselves to regulating the relationship with companies' direct suppliers. This can make it challenging to ensure that the principal company's approach and requirements are respected by sub-suppliers throughout the entire supply chain. Recognizing this challenge, some codes of conduct require that sub-suppliers also commit to and comply with the same requirements.

- In some cases, the approaches and processes which have been traditionally employed to protect supply chains against accidental occurrences have been applied to protect supply chains against the risk of criminal exploitation. This is especially the case of the food industry, which has adapted methodologies used to prevent non-intentional food poisoning to mitigate the risk of their supply chains being used as vehicles for deliberate/fraudulent conduct.
- Several guidelines and standards currently used to secure supply chains in the sectors under review have been first developed in the framework of industry-wide associations and subsequently integrated into member companies' internal policies/codes of conduct. In some cases, the standards elaborated by industry federations complement and even reinforce governments' regulatory environment. An example is the System of Warranties (SoW), an industry self-regulation initiative established by the World Diamond Council. The SoW goes beyond the Kimberley Process Certification Scheme (KPCS), which only covers trade in rough diamonds, by extending the same mechanism to polished diamonds and jewelry set with diamonds. The implementation of the SoW is envisaged as a mandatory practice in "responsible business" codes enacted by leading diamond and jewelry commercial bodies.
- A survey of the strategies and mechanisms utilized by the companies interviewed for this study have identified the following key policy and operational tools to enhance supply chain transparency and integrity:
    - Due diligence.
    - Monitoring suppliers' compliance with set standards.
    - Certification.
    - Online supply chain monitoring/policing.
    - Establishment of industry-wide information exchange platforms.
    - Cooperation with law enforcement agencies and other institutional bodies.
    - Cooperation with transport/logistics intermediaries.
    - GPS tracking/satellite monitoring.
    - Development of consumers' awareness and civil society empowerment.
    - Track and trace solutions.
    - Product authentication.
    - Leveraging Artificial Intelligence.
    - Other private-sector tools and initiatives.

Due diligence

- Due diligence in supply chain management is carried out before entering into a commercial relationship or when contracts with suppliers need to be renewed. Due diligence has become a cornerstone of company policies to ensure supply chain integrity. It is often mandated by national legislation as well enshrined in corporate codes of conduct. Due diligence processes are applied in all the sectors under review.
- Robust due diligence processes are predicated on companies' ability to have a precise overview of their supply chains' ramifications, analyze the consistency of documentation and spot any associated risks. In practice, different degrees of due diligence are conducted depending on the capabilities, size and financial resources of the company in question. In a few sectors under examination, due diligence has been highlighted as an especially complex process, with some sources indicating that due diligence processes may not always be as effective as they should. For example:
    - In the forestry sector, the process can be particularly demanding as companies are expected to conduct due diligence for each individual timber consignment, rather than producers or suppliers. Many supply chains are very complex, with traders and timber merchants buying from multiple sawmills, which in turn acquire logs from multiple forest management units. This means that a positive result for a timber consignment sold by a given sawmill does not guarantee that the next timber lot sold by the same sawmill will meet the same levels of legality and environmental compliance.
    - In the oil sector, larger refiners split parts of the due diligence process between different departments (e.g., trading, shipping, refining and insurance), with the risk that these departments fail to establish fluid communication flows with each other.
- Especially in the PMG sector, the scope of due diligence processes includes an examination of supply chains' susceptibility to abuse for money laundering. For example, either through their own codes of conduct (e.g., De Beers' Best Practice Principles) or the principles established by the business federations of which they are members, companies in the PMG sector adhere to Know Your Customer (KYC) policies as a key aspect of anti-money laundering policies. KYC policies typically require that companies:
    - Identify their counterparts by checking government-issued identification and government listings for money laundering, fraud, involvement in prohibited organizations and/or financing conflict.
    - Monitor transactions and report suspicious transactions to relevant authorities.
    - Maintain records for at least 5 years unless a longer period is required under domestic laws.
    - Appoint a focal point responsible for the implementation of KYC policy and procedures.

Monitoring suppliers' compliance with set standards

- Several companies under review have reported a long-term commitment to ensuring that approved suppliers comply with the standards and requirements enshrined in relevant policy documents (e.g., codes of conducts) throughout the duration of the business relationship. The most comprehensive supply chain monitoring systems observed as part of this study utilize a typical risk management approach and are structured around the following elements:
    - **Risk assessment.** Suppliers may be categorized on the basis of the degree of risk they pose, taking into consideration a variety of factors such as supplier country- and industry-specific circumstances as well as their compliance management systems. Supplier Self-Assessment Questionnaires may be used to further refine information.
    - **Auditing.** Individual suppliers may be audited more or less thoroughly depending on the risk level associated with each of them. IKEA's global Wood Supply & Forestry team, for example, performs approximately 200 global audits annually to verify the compliance of the wood entering supply chains with IKEA's requirements. The same company adopts a risk-based approach, which means a higher number of audits are performed in high-risk countries than in low-risk countries. Under Campbell's Responsible Sourcing Supplier Code, high-risk suppliers are audited by a third-party firm designated by Campbell. They are expected to fully cooperate and provide auditors with the appropriate records requested and allow for confidential interviews in connection with the audits.
    - **Corrective actions.** Any compliance gap identified as a result of the auditing process is addressed in the framework of a corrective action plan which sets a deadline for re-evaluation. Failure to implement the recommended corrective actions may result in the right to suspend or terminate the relationship.
    - **Periodic review.** Suppliers are monitored throughout the relationship lifecycle and reassessed after a maximum period of three years.
- In the framework of their policies aimed at monitoring suppliers' compliance with set standards, various companies organize awareness-raising/training programs to develop suppliers' capacities to comply with those standards. A key goal of 3M's Pulp and Paper Sourcing Policy, for example, is to "work with all suppliers to promote responsible sourcing and help transform the global pulp and paper supply chain." Over the past few years, 3M has conducted numerous one-on-one discussions with suppliers to help build their capacities to conform with the set policy expectations.
- Some food companies have reported monitoring their suppliers by activating "informal intelligence networks" made up of "boots on the ground" staff members and ingredient brokers. Existing employees within a certain market can provide valuable insights while brokers that deal with day-to-day issues can contribute timely local information.

Certification

- Most companies in the sectors under review adhere to some form of certification programs. Certification does not guarantee that a certain supply chain has not or will not be abused for illicit trade purposes. Rather, it provides an assurance that high/optimal levels of controls over those supply chains are being implemented. In addition to reducing the risk of illicit trade affecting their manufacturing and distribution processes, companies see certification as a tool that can help them increase consumer trust and eventually obtain higher market shares and profits. Certification can also be utilized by companies as a tool to facilitate compliance with legal requirements.
- Certification programs are often provided by industry-wide associations to member companies and appear to be well developed as tools in the agri-food, fishing and forestry sectors:
    - In the agri-food sector, the development of standards has been expanding as part of the industry's response to the growing request for assurance of safe and legal food at all stages of the supply chain. Business compliance with these standards is facilitated by programs aimed at the certification of management systems. Certification also enables the food industry to improve organizational performance and protect its reputation:
        - International Featured Standards (IFS) were developed jointly by suppliers and retailers and include eight different food and non-food standards, including fraud mitigation measures, covering various processes along the supply chain. IFS are used by industry stakeholders to meet new requirements for quality, transparency and efficiency resulting from global production processes.
        - Based on internationally recognized standards such as ISO and Codex Alimentarius, the Global Food Safety Initiative (GFSI) has built benchmarking requirements that form a widely accepted understanding of what constitutes a solid food safety certification program. GFSI's certification program entails a simplified "once certified, recognized everywhere" approach. This concept aims to reduce inefficiencies from duplication of audits and reduce trade barriers.
    - In the fishing sector, the development of certification standards is the specific goal of the Marine Stewardship Council (MSC). MSC seeks to provide a market-based incentive for all fisheries to voluntarily improve their harvesting practices as well as a means of verifying traceability through the MSC Chain of Custody (CoC) Standard. For a product to exhibit the ecolabel, all companies in the supply chain that have handled that product (including buyers, processors, traders and retailers) must be certified against the CoC Standard. This mechanism is intended to guarantee full traceability "from ocean to plate", ensuring credibility of the claim associated with the ecolabel that the product was sourced from MSC certified fisheries. The Responsible Fishing Vessels Standard (RFVS) is another sector-specific certification program. RFVS is

accessible to any commercially licensed fishing vessel or fleet of vessels globally which – following an independent evaluation – meets a number of criteria with regards to, crucially, its compliance with crew's working conditions.

- In the forestry sector, several private certification mechanisms exist that cover broad "sustainability" objectives. For example:
  - Stora Enso utilizes traceability systems to ensure that all the wood and fiber originates from legal sources and strives to obtain third party verification of these systems through the ISO and/or the Chain of Custody and PEFC Controlled Sources/FSC Controlled Wood schemes. In 2020, 98 percent of land in wood production and harvesting owned or managed by Stora Enso was covered by forest certification schemes.
  - Unilever's Sustainable Wood-Fibre Materials Policy proscribes that by 2020 at the latest, Unilever will source wood fibre-based materials solely from certified sources (with a full chain of custody). The policy requires suppliers to meet the EU Timber Regulation Due Diligence or US Lacey Act requirements and put in place time-bound plans to increase the share of certified material in the products they supply to Unilever.
  - A particular concern observed in relation to forestry-related certification is that it may be too onerous to achieve for smaller timber actors or those operating in countries with weak-quality public sector institutions, which include the regions that are most vulnerable to illegal logging practices. As more companies require certification as a prerequisite for doing business, this can effectively become a self-reinforcing market access restriction for non-certified wood.

Online supply chain monitoring/policing

- Several companies whose products are exposed to illicit trade, especially in the form of IP infringements, have reported investing significant resources in carrying out online investigations aimed to detect rogue websites/ads and have them removed. In many cases, interviewed companies have entered collective or bilateral partnerships with online platforms to proactively identify counterfeits of their brands. For example:
  - In Southeast Asia, leading brands set up the Southeast Asia e-commerce Anti-counterfeiting (SeCA) Working Group, spearheaded by Lazada Group in partnership with companies including HP and BMW.
  - Set up in 2020, Amazon's Counterfeit Crimes Unit, composed of former federal prosecutors, former FBI agents, experienced investigators and data analysts, supports law enforcement efforts to prosecute those attempting to sell counterfeits on their platform.
- The enhancement of online monitoring/policing techniques is also being pursued by cross-industry associations such as the International Anti-Counterfeiting Coalition (IACC). A program initiated by IACC provides rights-holders with a streamlined

mechanism for expedited take-down actions against infringing listings and sellers, complex issue resolution and special policies to address counterfeiters' evasive tactics, as well as the hands-on support of dedicated, Chinese-speaking analysts.

- Some noteworthy initiatives exist in the illicit wildlife domain. The Coalition to End Wildlife Trafficking Online, for example, gathers 47 tech companies around the world with the shared objective to mitigate the online illicit wildlife trade by training staff to increase detection capabilities and educating and empowering users to report suspicious posts. Launched in 2018, the Coalition maintains a multilingual library of keywords identified as being commonly used by sellers to evade detection as well as by buyers to search for prohibited wildlife products. Coalition members incorporate these wildlife-specific keywords into their automated text identification filters. To measure the effectiveness of its mitigation efforts, the Coalition relies on a series of indicators, among which:
    - The number of listings removed (on traditional e-commerce platforms).
    - The number of posts, accounts and groups removed (on social media platforms).
    - The number of company enforcement staff trained to detect illegal wildlife.
    - Company communication efforts to educate users, such as with pop-up alerts and redirection.
    - The inclusion of the Coalition's list of key search terms in block filters adopted by companies.
    - Industry-wide information exchange platforms
- Industry-wide platforms play an especially important role as avenues for information-exchange, particularly for good practices dissemination, contributing to companies' supply chain risk mitigation efforts. For example:
    - In the agri-food sector, the Food Authenticity Network comprises 959 members from 45 different countries and collects global information on food authenticity testing, food fraud mitigation and food supply chain integrity. Another knowledge-sharing platform is the Consumer Goods Forum (CGF), which gathers 42 retailers and manufacturers. Based on its multi-stakeholder working groups and website, the CGF has contributed to sharing and building food safety expertise and professional networks.
    - United for Wildlife (UfW) encourages public and private actors to work collaboratively through the sharing of information and best practices across sectors and borders. Together, involved entities represent a significant proportion of the shipping, airline and financial industries. Under UfW, two taskforces have been established: the Transport Taskforce and the Financial Taskforce, which have collectively trained 85,000 employees, supported more than 250 investigations and contributed to 124 arrests. The core of the Transport Taskforce activity is an Information Sharing System (ISS), which provides

case-specific intelligence alerts and regular strategic information bulletins on trafficking trends, typologies and red flags to Taskforce members. Driven by member feedback and requests, the ISS disseminates monthly bulletins on issues of high concern to Taskforce members. As to the Financial Taskforce, it relies on an ISS for the sharing of strategic and operational intelligence, which is critical to implementing risks and red flags into existing company risk and security management processes.

Cooperation with law enforcement agencies and other institutional bodies

- The present study has collected various examples of collaborative schemes between industry and law enforcement in the sectors under review. Key areas in which companies take a proactive role include:
    - Putting customs authorities on notice of suspicious cargo.
    - Technical support during cargo and premises inspections.
    - Awareness campaigns and training for customs authorities, including on distinguishing between fakes and originals, use of technology for onsite authentication, and sharing latest trends on illicit trade dynamics, routes and concealing techniques.
    - Providing information to law enforcement and inspection bodies to detect retail outlets where goods are illicitly manufactured, distributed or sold.
    - Bringing together industry security representatives supply chain stakeholders, law enforcement agencies and crime mapping organizations in order to share expertise, intelligence and best practices.
- In addition to providing support to law enforcement agencies, private sector stakeholders have reported active cooperative arrangements in place with a variety of institutional bodies that exercise functions related to illicit trade prevention. For example:
    - In the pesticides sector, CropLife International works with regulators in Asia to ensure e-commerce platforms are reminded of their obligations vis-à-vis online sellers, especially when sellers are requested to provide pesticide registration certificates.
    - In the wildlife sector, the ROUTES project gathers governmental agencies, the transportation and logistics industry, international conservation organizations and donors in carrying out, among others, technical assessments at international airports. The assessments aim at raising the level of awareness among key players of the potential misuse of air freight services by traffickers, evaluate the adequacy of the procedures in place, the identification of best practices, etc.

Cooperation with intermediaries

- Over the past few years, various intermediaries in the physical and virtual world (e.g., service providers, logistics companies, financial institutions, online platforms) have stepped up their efforts to ensure that their segments of the supply chain are not exploited for illicit trade purposes.
- A growing number of private-sector projects – whether implemented by intermediaries alone or in partnership with sector-specific companies – seek to ensure that logistics infrastructure is not abused. The most prominent initiatives target the illicit wildlife trade. This can be explained by the magnitude of the problem as well as the general public's particular sensitivity to a type of illicit trade that jeopardizes the survival of entire species and ecosystems. Some cutting-edge programs and initiatives implemented in this specific sector could offer an interesting blueprint for other sectors to follow. For example:
    - Several airlines have banned certain species from their cargo holds. Moreover, under a Memorandum signed by the International Air Transport Association (IATA) and CITES, customs officials, scanners, baggage handlers and dogs have been given a role in detecting illicit wildlife items. Dogs are increasingly being used at airports to screen checked-in and hand luggage, freight and travelers.
    - In response to its commitments as a signatory of the United for Wildlife (UfW) Buckingham Palace declaration, the Mediterranean Shipping Company (MSC) has set up three specialized screening centers in strategic locations and created a detection system – using the most recent algorithm technologies – to analyze incoming booking and shipping documentations in real-time and assigning to each shipment a risk score according to specific criteria such as routing and shipper information.
- Recognizing the illicit wildlife trade as a transport-intensive activity, DHL has taken the following measures:
    - With the support of TRAFFIC, DHL Express Teams are trained to detect suspicious packages (e.g., recognizing shapes and spotting suspicious outlines of popular trafficked parts like horns, skeletons or bones of live animals).
    - Standard Operating Procedures include steps to identify and report evidence of trafficked animals to law enforcement authorities. In hot-spot locations, DHL Express Teams profile shippers and engage the local police for immediate seizures of illicit shipments.
    - Implementing a strict recruitment policy, which includes screening candidates' backgrounds.
    - Adopting whistle-blowing policies or helplines to protect the integrity/ anonymity of those who wish to report suspicious activities.
    - Establishing voluntary codes of practice at the country level. In 2019, for instance, DHL Express signed such a code to refuse delivery of illegal wildlife and products thereof with 13 other courier and logistics companies in China.

- Private sector associations engage with intermediaries such as transporters, often by signing MoUs, to commit to greater accountability and responsibility in tackling counterfeits in their supply chains. With regards to maritime transport, in particular, leaders from global shipping firms, freight forwarders, brand owners and industry organizations have signed a joint "Declaration of Intent to Prevent the Maritime Transport of Counterfeit Goods". The document calls on the maritime transport industry to address the problem "through continuous proactive measures, and corporate social responsibility principles." The Declaration includes a zero-tolerance policy on counterfeiting, strict supply chain controls and other due diligence checks to stop business cooperation with those suspected of dealing in the counterfeit trade.

GPS tracking/satellite monitoring

- Companies are increasingly turning to satellite imagery to help meet their objectives in terms of supply chain monitoring.
    - In the oil sector, monitoring the movement of tankers through satellite imagery has been found effective in reducing opportunities for illicit activity when used in conjunction with a molecular marking scheme. While tampering with and manipulating GPS-based vessel identification systems remains a possibility and a number of cases have been reported in the media, the presence of trackers installed onboard ships constitutes a first important line of defense.
    - Combined with data stemming from identification and positioning systems installed onboard vessels (e.g., Automatic Identification System, AIS), satellite imagery has been instrumental in providing a more accurate picture of global fishing activity. Additionally, use of cloud-penetrating satellite imagery can dramatically increase the visibility of such activity. The real-time analysis of multiple layers of data, for example, is the defining feature of Project "Eyes on the Seas", which supports authorities in the detection of suspicious fishing activity.
    - In the forestry sector, the Starling Project is the result of a collaboration between Earthworm Foundation and Airbus and allows companies to track forest cover change in their upstream supply chains and use that information to engage suppliers and protect crucial forest areas. The system uses a combination of 1.5M spot images and radar satellite technology, which allows the system to cut through cloud cover to identify crop types and replanting and deforestation trends. In contrast to traditional ground-based auditing, satellite monitoring systems provide frequently updated and precise images, which allow for better awareness of on-the-ground situations.

Development of consumers' awareness and civil society engagement

- Industry stakeholders implement a range of initiatives to improve consumer awareness of the dangers posed by illicit trade, including via online platforms. A few noteworthy examples include:
    - Pfizer's 'Fight the Fakes' campaign features a dedicated website to enable people to share stories of how their lives have been affected by illicit medicines. The website also serves as a resource for organizations and individuals who are looking to support this effort by outlining opportunities for action by sharing information and factsheets on sub-standard and falsified medicines.
    - AB InBev has established a partnership with governments and civil society, which seeks to ensure the illicit alcohol market is properly understood in terms of size, shape, dynamics and drivers. As part of this global campaign, an external entity has been commissioned to carry out research resulting in more the 50 studies in 27 countries and a global report. The associated knowledge has created awareness on health, fiscal and value chain negative impacts and risks worldwide.
    - The pesticide industry has launched awareness exercises targeting farmers, retailers and policy makers on the threat posed by illicit pesticides. At the European level, industry stakeholders have been working to broaden awareness across a wide audience. In Poland, for example, it has disseminated the outcome of market research showing that only 50% of the products being sold were legitimate. These awareness raising campaigns, which include the use of social media to send anti-counterfeiting messaging to peers, have had a positive effect in terms of making farmers and distributors realize the extent of the problem.
    - Several business associations have initiated consumer awareness campaigns on the harms of purchasing counterfeit goods on their health and safety, the society and the economy. Notably, the International Trademark Association's (INTA) Unreal Campaign aims at educating those aged 14 to 23 about the importance of trademarks and brands and the dangers of purchasing fakes.
    - Some projects aim at providing consumers with the tools needed to make informed purchasing decisions. The Sustainable Seafood Coalition (SSC) – a group of UK-based businesses – has followed this approach by developing two distinct voluntary codes of conduct: i) a "labelling code", which aims to create harmonized seafood labelling for consumers to be able to access accurate information on fish provenance and sustainability; ii) a "sourcing code", to increase consumers' confidence that the seafood they are buying meets or exceeds minimum standards of responsibility.
- This study has identified initiatives aimed to enhance consumers' purchasing decisions by seeking their proactive engagement in overall prevention efforts. For example:
    - A campaign run by the UK Wine and Spirits Trade Association in partnership with Crime-Stoppers encourages the general public to report those selling illicit alcohol. An Alcohol Fraud Reporting Form is available to help users transmit information on fraud involving alcoholic beverages – beers, wines, spirits and ready-made products – in an anonymous manner.

- In the pharmaceutical sector, the Center for Safe Internet Pharmacies has provided a channel for consumers and medical professionals to verify the certification of online pharmacies and report illegal online outlets or counterfeit products.
- In the agri-food sector, customer complaints can be critical tools to identify and address problems at an early stage.

Track and trace solutions

- To improve legality, transparency and due diligence requirements, the private sector has developed and adopted a variety of "track and trace" systems to provide a means of modelling and recording product movements throughout the supply chain. While tracking essentially refers to finding out where a product is located in the supply chain, tracing aims at chronologically identifying which entities have handled the product along the supply chain, from the point of manufacturing to retail sale.
- Major incentives for industry to adopt track and trace solutions are related to legislative requirements and certification processes. At the same time, NGOs convey continual pressure on companies and governments to improve accountability and transparency in business throughout supply chains.
- Available traceability systems vary in form, type and level of sophistication. They can be paper-based or technologically advanced such as those incorporating digital/optical as well as chemical and genomic features.
- A specifically observed drawback of track and trace solutions relying on paper or physical features is their vulnerability to forgery. In the forestry sector, for example, hand-painted markings applied to individual logs and timbers are the most commonly used identification technique because of their low cost, easy application and durability.
- Traceability efforts are often significantly enhanced by the use of cutting-edge technological features. Technology plays a central role in generating accurate, timely and actionable information about the path followed by goods along supply chains. At the same time, a reported challenge lies in maintaining traceability at different points along supply chains due to a lack of established and uniform standards for data exchange, identification/labelling, coding and interoperability of systems. Other challenges include language barriers, supply chains of varying sizes, lack of capacity within industry stakeholders, differing domestic regulations concerning traceability requirements and concerns over privacy and data protection.
- Most technology-based solutions reviewed under this study revolve around the serialization concept, which is broadly understood as the process of assigning a unique number or identifier to a given product or packaging level. Serialization notably leverages one of the following technologies or a combination of thereof:
  - **Barcoding.** Physically affixed to products, barcodes provide a one-dimensional scannable identification number where the readings can be readily transferred electronically to a tracking database. While they offer a relatively low-cost mechanism and one that is difficult to forge, barcodes themselves can be detached from the product that they are meant to identify.

- **QR codes.** They are a type of two-dimensional matrix barcode that can hold much more information than one-dimensional barcodes. While these latter can represent up to 25 characters, a QR code can contain up to 2500, including for example information about the URL of a product's page). Also, QR codes can still be readable while being up to 10 times smaller than a one-dimensional bar code.
- **Radio Frequency Identification (RFID).** Similar to barcoding, RFID systems provide uniquely referenced products where the ID number and other product data are wirelessly transmitted between the tag and the RFID reader. RFID is often regarded as the gold standard because of a number of advantages. It is weather and UV exposure resistant. Compared to manual systems, RFID tags can be automatically read at a distance, preventing human error and drastically reducing recording time. They do not require proper illumination and a precise line of sight (in contrast to QR and barcodes), and are unaffected by mud, dirt, or resin. The mechanism is also resistant to forgery. However, it is relatively expensive and requires trained staff and often connection to the Internet or mobile phone networks.

- Several companies pointed to blockchain as an area that the private sector has been exploring with growing interest and whose potential has not yet been fully realized. The attractiveness of blockchain lies in its ability to preserve data integrity thanks to its decentralized structure and encryption features. This technology notably guarantees the immutability of information through a distributed and highly secured ledger. Examples of companies that reported experience with blockchain include:
  - In the precious metals and gems sector, TrustChain is a collaborative endeavor between IBM, UL, independent third-party verification and five diamond and jewelry companies representing the entire supply chain.
  - 'IBM Food Trust' is a blockchain tracking system to promote safer and smarter food supply chains. The initiative connects participants across the food supply chain (i.e., producers, suppliers, manufacturers, retailers, and consumers) through a permanent and shared record of transaction and food system data, significantly reducing opportunities for fraud. Walmart and Carrefour have adopted this technology to provide consumers with greater trust in their products and to differentiate their brands from their competitors.
  - Some alcohol brands are introducing blockchain technology to label their products and facilitate the verification of their authenticity. By scanning a code on a bottle, closure, or label, consumers can access the ledger with information about the product, its quality, how it was manufactured and the nodes of the supply chain that it followed.

Product authentication

- Depending on the sector under consideration, solutions for product authentication verify whether a product is genuine, or the declared point of manufacture/harvest is legitimate, or the product itself is what it claims to be. In the forestry sector, for example, authentication verifies whether logging originates from forests that have been managed responsibly or in compliance with applicable regulations. In the fishing sector, it establishes whether or not certain fish or fish products correspond to the declared species. Some of the technologies used for authentication purposes, including RFID and blockchain, are also the backbone of track and trace solutions.
- The present study has collected numerous examples of innovative cross-sectoral technologies for product authentication. These include:
    - Molecular fuel marking, currently used in the petroleum products sector. Although an EU study on downstream oil theft has argued that dye can be potentially removed by illicit actors looking to profit off "laundered" fuel, molecular markers are not visible to the naked eye and molecular marking remains one of the most effective technological solutions against smuggling, siphoning and adulteration of fuels.
    - In the precious metals and gems sector, laser-marking technologies work by applying a nano mark to the atomic structure of the diamond, thus basically replicating a process that occurs in stones over millions of years. In 2021, ALROSA released a new laser-marking tool to its diamond customers, allowing them to trace rough stones and polished gems from the mine to the jewelry store. The physical mark is only visible with a special scanner and differs from other modern tracing techniques based on keeping a digital copy of the gem, including with blockchain, or laser engraving, which can be polished off.
    - In the pesticides sector, Bayer has developed a closure seal with optical security features and a QR code that farmers can scan with an interactive app to receive key information about product authenticity. This technology is currently applied to the packaging of all Bayer crop protection products that are filled in bottles and sold in the Europe, Middle East, Africa and Latin America regions, as well as parts of Asia/Pacific.
    - Luxury brands such as Salvatore Ferragamo are using RFID in their bags and shoes for authentication. It allows the item to be easily scanned to distinguish it from fakes. It has proved to be effective for customs enforcement agencies, enabling them to scan for fakes based on information provided by the company.
    - The forestry sector appears to be especially advanced in establishing wood provenance by using various cutting-edge technologies. These have been found to be extremely useful as additional tools to determine points of origin in case of deliveries from high-risk countries.

Leveraging Artificial Intelligence

- While it is still in its infancy, Artificial Intelligence (AI) is already being applied to reveal illicit supply chains or detect problems and inconsistencies in licit ones.
- Online image recognition appears to be an area where AI is being employed with a degree of success. While counterfeiters frequently steal and upload on rogue sites pictures from legitimate websites, they often make spelling/ grammatical mistakes and fail to add details under product descriptions. Modern artificial intelligence technologies can search out and detect inconsistencies by examining images and descriptions of the original product listings of online retailers in addition to pricing and customer reviews.
- Important breakthroughs have also been made in research aimed at using AI to address the illicit wildlife trade. For example, camera traps exist in animal habitats which, using smart sensors, turn on and capture images of animals of interest for researchers and conservationists. This data can be used to train algorithms that recognize animal species. The same technology can potentially be applied at borders to determine if live animals passing through customs should be there or not, or to detect illegal products.
- Current research studies are trying to determine if artificial intelligence can be used to recognize text which could aid in verifying paperwork for the cross-border transportation of animals. Similarly, sources consulted for this study mentioned that solutions originally conceived for the "human" space could be adapted and find relevant application in the wildlife domain too. For instance, a car park sensor can be adapted to recognize the number of a certain species in a protected area. Facial recognition technology used by social media has been recently applied to the tracking of chimpanzees being sold online.

Other private sector tools and initiatives

- In the oil sector, use of accurate meters and monitors to instantly confirm how much fuel is being lost in transit/storage, where and when it is being stolen and, therefore, what can be done to stop it. Private security entities are often hired to guard and protect oil in addition to recorded and/or live feed cameras. Drones and fiber optic sensors in pipelines are also used to track oil theft.
- In the fishing sector, cameras, video recording or still images are deployed at key points on vessels to allow a view of the fishing operation, including the composition of the catch. Electonic Monitoring Systems (EMS) offer key benefits regarding the monitoring of compliance during fishing. Provided that an adequate legal framework is in place, image information could potentially be used to prosecute a case of IUU fishing or exonerate a legal operator.

- In the alcohol sector, to disrupt the practice of empty genuine spirits bottles being collected and/or bought by counterfeiters who refill them with fake spirits and apply fake closures, Diageo runs glass bottle recycling schemes across its markets. As part of a wider campaign to address illegal alcohol and raise consumer awareness, for example, over 120,000 bottles of the key target brands for counterfeiters were destroyed or recycled during a 6-month period in Colombia and Peru.
- In the pharma sector, manufacturers and warehouses have reported dividing tasks among their employees in such ways as to reduce the risk of collusive practices leading to products' illegal diversion. To this end, the concept of "duty segregation" is implemented whereby different tasks are performed in separate physical areas and based on different personnel policies and operating procedures (e.g., warehousing/security is handled separately from checking/dispatch and transportation).
- In the wildlife sector, open-source initiatives such as Wildlabs were born to build an online community among those involved in conservation and develop technological solutions. Within its first year of existence, Wildlabs has grown into a community of over 1300 members collaborating to develop new hardware technologies. These include an acoustic monitoring device for tracking wolves and an automatic elephant detector using machine learning. Members also play a role by crowdsourcing answers to questions ranging from low-cost wildlife tracking tags to self- powered camera traps.

PART 2: SECTOR-SPECIFIC ANALYSIS

I. AGRI-FOOD INDUSTRY

1. Overview and findings

What is illicit trade in agri-food?

The term is a general one used to capture multiple illicit activities, which can be subsumed under two broad categories: smuggling of agricultural products and food fraud.

- **Smuggling** refers to the illegal moving of food products across borders to avoid customs duties and/ or other types of import/export controls. Smuggling operations are typically driven by a divergence between the price of goods in origin and destination countries, including price gaps stemming from different tax rates and/or the application of government subsidies in origin countries.
- **Food fraud** schemes invariably involve an element of deception, which manifests itself in the intention to mislead customers about the food quality and/or content in order to obtain an undue economic advantage. Food fraud can take a wide variety of forms, of which the most common are:
  - *Adulteration.* One or more substances are secretively added to a food product in order to increase its value (e.g., mixing olive oil with chemical derivatives or cheaper oils). The term Economically Motivated Adulteration (EMA) is often used to distinguish cases where fraudsters have a profit-making goal from those where adulteration is committed with the purpose to cause harm (e.g., a terrorist motive).
  - *Substitution.* Food items are replaced with species of a lower value but presented as the higher value species. For example, sweeteners are substituted to honey.
  - *Increasing product weight.* Usually affecting the meat sector, water is added to the product to increase its weight, thereby increasing sellers' income.
  - *Additives.* In order to extend the shelf life of a product, or to make it more attractive to consumers, unapproved additions are mixed in.
  - *Mislabelling.* A lower value product is labelled as a higher value product.
  - *Tampering.* Expiration dates of food past their prime are altered to appear fresher.
  - *Theft and resale.* A food product is stolen from its legitimate supply chain and resold via unauthorized channels.
  - *Waste diversion.* Food, drink or feed meant for disposal is illegally diverted back into the supply chain.
  - *Counterfeiting.* A food product is deliberately misrepresented with respect to its identity and/or source in such a way as to infringe a protected trademark.
  - *Incorrect packaging.* Food items are sold in packaging that does not comply with applicable health and safety regulations.
  - *Illegal processing.* Food products are processed in unauthorized premises or using unapproved/illegal techniques.

The illicit trade in agri-food is not a new phenomenon. More recently, however, the impacts of food fraud have been "amplified by larger batch sizes due to mass production, expanding the volume and velocity of global supply chains. Also, food fraud is more frequently detected since there is more authentication equipment with faster and more precise technologies."[1]

While all food sectors appear to be some form of illicit trade, the industry sectors that have reported the highest percentages of food fraud incidents include dairy, meat, seafood, wines, spirits, oils, honey, juices, coffee and tea and organic foods.[2]

Case study: Beyond borders: uncovering the complexities of agricultural product smuggling in ASEAN

In the ASEAN region, the regulatory and compliance environment has struggled to keep pace with the growing agri-food industry. The high import and export tariffs in countries such as Indonesia and Thailand have encouraged smuggling of certain foods and liquors. Further restrictions on import/distribution licensing arrangements, onerous product regulatory standards, and a lack of uniform food security and trade standards have resulted in trade barriers, creating opportunities for traffickers to engage in illegal agri-food trade.[3]

Sugar smuggling, for example, has deprived various ASEAN governments of revenue and threatened local industries on which local farmers depend for their livelihoods. Confed, the largest organization of local sugarcane farmers in the Philippines, argued that continued illegal entry of cheap sugar "would ultimately gobble up the sugar industry."[4]

Whether in the form of smuggling operations or fraud schemes, the illicit trade in agri-food entails a wide range of negative impacts on food security and sustainability, consumers' health and trust, the food industry and national economies:

Impacts on food security and sustainability

As they lack strong food-safety control systems and cannot afford to buy safer, but more expensive products, developing countries and low-income communities are particularly vulnerable to illegal practices in the agriculture sector. Driven by fast population growth and increased demand, the illicit agri-food trade may also exacerbate unsustainable food production patterns, such as when illegally sourced seafood is fraudulently introduced into legitimate supply chains or when tropical forests not meant for agricultural land are illegally converted to palm oil plantations. Unsustainable food production patterns contribute to declining arable land, degradation of key ecosystems, natural resource depletion and deterioration of soil, water and biotic resource bases on which all food production depends.[5]

Impacts on consumers' health

In the past few decades, several fraud-related incidents have been reported causing significant health issues, some of which affecting a large number of people. In 2008, for example, melamine-adulterated milk was used in the manufacture of infant formula in China, leading to six deaths and the hospitalization of more than 50,000 babies. In 1981, nearly 700 people died and over 20,000 were made ill in Spain after consuming rapeseed oil intended for industrial purposes but sold on street markets as "olive oil."[6]

Food fraud may also affect human health indirectly. It is well-known, for example, that protracted exposure to low-level toxic contaminants or absence of active or beneficial ingredients in dietary regimes, such as preservatives or vitamins, can have harmful health consequences.

Even when food products are not adulterated, they can still be the object of smuggling operations that introduce invasive species, disease-carrying pathogens or contaminants into transit or destination countries.

When they affect consumers' health, illicit trade practices in the agri-food sector breach a basic right of citizens as enshrined in the International Covenant on Economic, Social and Cultural Rights. According to article 11 of the Covenant, "the States Parties to the present Covenant recognize the right of everyone to an adequate standard of living for himself and his family, including adequate food."[7] As a result, governments have a mandate to ensure food safety, whether it is destined to domestic consumption or international trade.

Impacts on consumers' trust

Food fraud incidents may have long-term effects on consumer trust. Once confidence in the food system is lost, even the rumor of food fraud can produce far reaching damages. Unsubstantiated rumors of plastic in rice on the markets in Africa[8] and plastic in seaweed in China[9] circulating on social media platforms have stoked fear in consumers and damaged brands, imports and profits of legitimate producers.

Food fraud may also deceive consumers into unknowingly ingesting ingredients that would otherwise be avoided for religious or ethical reasons.[10]

Impacts on the food industry and national economies

Estimates gathered by the US Food and Drugs Administration in 2022 have found that food fraud affects 1 percent of the global food industry at a cost of about USD 10-15 billion a year, although some more recent expert estimates put the cost as high as USD 40 billion a year.[11]

Fake, substandard, smuggled and illegal agri-foods distort and destabilize food markets, undermine economic growth, cost jobs and hurt entire sectors of national economies. For a legitimate company, this form of illegal competition reduces sales and employment opportunities and disincentivizes investment. This is especially the case for small-scale food producers in developing countries. For example, sugar smuggling by illegal cartels in Kenya has drained tens of thousands of jobs[12] and stripped the government of legitimate tax revenues.[13] In cases where illegal agri-food trade results in injury or harm, a corporation's economic sustainability can be severely damaged. A study commissioned by the Grocery Manufacturers Association estimates that one adulteration incident can cost a company between 2-15 percent of yearly revenues.[14]

In Pakistan, where tea smuggling is estimated at more than a third of the total national market, Unilever Pakistan Limited has reported that "business operations and profitability of legitimate commercial importers and packers have been severely curtailed."[16]

Whether or not they are adulterated, smuggled food products may by themselves pose unique risks to the agricultural economy and imperil the trade status of the country to which they are exported. For example, an outbreak of Exotic Newcastle Disease among poultry in California in 2003 was attributed to smuggled game birds from Mexico. As a result, California poultry farmers incurred eradication costs of approximately USD 168 million.[16]

Case study: Behind the label: examining food adulteration cases in the US

The following case studies have been reported by the US Food and Drug Administration (FDA):[17]

- *Concealing poor quality fruit juice:* In 2021, a court-ordered consent decree barred Valley Processing from operating until it implemented various food safety processes. In addition to finding high levels of arsenic and patulin in the company's juices, an FDA inspection found they had stored contaminated grape juice for a long time in dirty conditions and then blended it together with newer batches of grape juice to hide the bad quality of the old juice and make the old juice appear of better or greater value than it was. This juice was sold to school lunch programs.
- *Foreign crab sold as US crab:* In 2019 and 2020, a father and son who ran Casey's Seafood were sentenced to prison for repackaging foreign crab meat as blue crab caught in the US. In another similar case, the owner of Capt. Neill's Seafood was sentenced to prison and fined USD 250,000 in 2020 while the company was put on probation and fined USD 500,000.
- *Fake Parmesan cheese:* In 2016, the president of Castle Cheese was sentenced to three years' probation, a USD 5,000 fine, and 200 hours of community service. The company had been adding cellulose (wood pulp) and cheddar to grated parmesan that they sold as 100 percent

2. *Modus operandi*

2.1 Supply chain modalities

In an ever-connected world, "the process of food production involves discrete production stages from farm to fork, i.e., during growing, harvesting/slaughtering/catching of primary products, primary processing, secondary processing of food/food ingredients, packaging, labelling, storage and dispatch. These are all pinch-points where food crime activities could occur."[18] For example, the supply chain for a highly processed snack food involve a wide range of producers (corn, wheat, sugar) and processing facilities. Monitoring food supply chains can thus be particularly challenging, especially when it concerns highly processed foods containing several ingredients and inputs from multiple suppliers.

While each food sector is characterized by its own distinctive supply chain map, they all feature a variety of actors (e.g., farmers, manufacturers, warehouses, wholesalers retailers, distributors) and "hot spots" potentially exposed to criminal infiltration. Ocean-based food transportation supply chains appear to be particularly vulnerable in view of the high number of intermediaries involved in the shipping industry and sea-related logistics (e.g., freight-forwarders, ports, shipping companies).

Crucially, "evidence suggests supply chain actors at different tiers of the supply chain (farmers, processors and retailers) present different fraud vulnerabilities depending on the type of food processed and other factors. […] Researchers of food supply chains have found the most significantly vulnerable point for fraud in supply chains is generally with wholesalers and traders, followed by retailers and food processing groups. Other points of vulnerability reside with actors in food supply chains that have significant processing capabilities to mix extraneous materials, which may not be feasible at the retail stage."[19]

Case study: Deceptive seas: unraveling seafood fraud through mislabeling and substitution practices

According to a 2018 study on food security, "nearly one is every five [seafood] samples tested worldwide [is] mislabelled. Moreover, fraud was found at every level of the seafood supply chain. However, the majority of studies (80 percent) were conducted at the retail level, such as restaurants and grocery stores."[20]

While some mislabelling may result from human error in identifying fish species or their origin rather than fraud, reports indicate that substitution practices are carried out intentionally within seafood supply chains. In this sector, fraudulent behaviour is facilitated by the nature of seafood itself as a highly traded commodity with a very diverse range of closely related and visually similar species undergoing processing. This reduces or even eliminates the morphological features of the product, making species identification particularly difficult and virtually impossible to perform by simply observing or smelling the product.

Moreover, the fact that seafood has become a limited resource and is subject to price pressures has further stimulated a substantial market for substitution and mislabelling within the industry.[21]

Within illegal food supply chains, different dynamics are at play depending on the push and pull factors in various markets all over the world – consumer preferences, price changes, supply and demand, quality of food safety programs, degree of law enforcement. Despite the differences observed in the food sectors, all forms of illicit trade in agri-food appear to be present around the world and in all sectors of the food supply.

Case study: From supply chain to plate: the impact of COVID-19 on food fraud

As governments enacted an array of strict social distancing measures to contain the COVID-19 pandemic, food fraudsters saw an unprecedented window of opportunity. As shown by OPSON X – the annual INTERPOL/EUROPOL operation targeting illicit food and drink, law enforcement agencies in 72 countries confiscated 15,451 metric tons of illegal products for an estimated value of USD 53.8 million between December 2020 and June 2021. Compared to OPSON IX, that represented an increase of 28 percent and 16 percent respectively.[22]

According to EUROPOL's Executive Director, one of the trends that emerged from OPSON X was the infiltration of low-quality products in the supply chain, which may be linked to the economic and social consequences of the pandemic. Other experts have sought to explain the connections between food fraud cases, supply chain disruptions and COVID-related government-imposed restrictions as follows:

- Shifting from in-person checks to a paper-based system may have created more opportunities for counterfeiting goods or forging documents at border points.
- At the outset of the pandemic, as supermarkets were being quickly emptied, pressure from consumers led trafficking networks to rush to fill the gap between demand and supply. The shortage of seasonal farm workers due to mobility/social restrictions increased this gap further.
- Restaurants' protracted closures created an accumulation of unused goods (e.g., grains) that were past their expiration date. Food traffickers likely exploited the situation by acquiring them and selling them as fresh.

The above-mentioned scenarios may have contributed to the surge of the most common types of food fraud, notably adulteration and misrepresentation of origin.[23]

2.2 Transport Dynamics

The illicit trade in agri-food exploits all types of transportation means, including land, air and sea travel. While smuggling operations often require that products be concealed to avoid detection by customs authorities, the same cannot be said of food fraud. For example, as only a laboratory analysis can often determine whether food items have been adulterated, these can be easily moved undetected across borders, mixed into the licit economy and therefore enter and move about nations as legitimate goods. Many illicit food items thus enter markets through the same routes as the ones followed by legitimate products.

2.3 Hotspots

2.3.1 Online

The advent of online grocery shopping and the emergence of new food chain operators, such as online e-commerce platforms and delivery companies, have opened up new avenues and opportunities for food fraud.[24] Adulterated products, for example, are much more easily moved through the supply chain when being directly shipped to the public, there are fewer inspection points and a lack of face-to-face contact between traders and consumers. There is no real chance to examine the food items before buying them and payment is often required in advance of delivery.

Fraudulent online behavior in the food sector has been facilitated by social media, with research showing that individuals are more frequently singled out for the sale of fraudulent food products when they have personalized profile pages on social media.[25]

Case study: Feast or fraud: the illegal online food market in the EU

In the EU, the role of e-commerce platforms as channels through which products reach consumers has become increasingly important. According to the latest report of the EU Alert and Cooperation Network, demand for online shopping grew exponentially during the pandemic. In 2021, the Rapid Alert System for Food and Feed Network (RASFF) member countries exchanged a total of 281 notifications related to e-commerce between them. Half of all requests for online-traded products concerned dietetic foods, food supplements and fortified foods.

The second largest product category that made the object of notifications under RASFF was food contact material (i.e., food packaging and containers, machinery to process food), which appeared in 33 percent of the requests. Preliminary data show that close to 90 percent of this illegal food contact material is sold online by e-traders and e-platforms.[26]

2.3.2 Free Trade Zones

No information was identified in on FTZs as channels/hot spots to specifically facilitate the illicit trade in agri-food.

2.3.3 Postal systems/ express couriers

The delivery of food items via postal systems/ express couriers is directly linked to the exponential growth of food-selling e-commerce platforms.

Traffickers in agri-food products exploit the enormous challenges of detecting the myriad illegal consignments moved via small parcels that also characterize the illicit trade of other types of goods. In the food sector, these challenges sometimes appear to be even greater. For example, it may be difficult to determine whether food items delivered by express couriers are toxic or unhealthy as a result of negligent behavior. This may occur because certain online food delivery services operate by leaving a bag of groceries outside the door of the consumer. This may expose perishable products to the outside temperature for several hours, with potentially serious deterioration of hygienic standards and consequent difficulties in establishing a potential food fraud.[27]

3. *Links to organized crime, corruption and other criminal offences*

3.1 Organized crime

Although many food fraud incidents can be traced back to individual unscrupulous operators, some cases clearly appear to be linked to organized criminal syndicates.

In Italy, for example, organized criminal groups have been involved in the commodity value chain of many Italian food products exported abroad,[28] generating an uptick of food crime in products such as cheese and olive oil.[29] The term "agromafia" has generally been used to identify organized criminal groups (OCGs), such as the Camorra, involved in food fraud. However, recent research has emphasized the involvement of "legitimate actors" that are "endogenous" to food supply chains.[30] This finding has been corroborated by law enforcement agencies, which have also observed the presence of corporate players. According to the Italian National Antimafia Prosecutor, food criminality is often committed by "corporate criminal actors that dress up as legitimate entrepreneurs making food crime more a business crime rather than a mafia-like crime."[31]

Given its connections to organized crime, illicit trade in agri-food is one of the factors behind the deterioration of national and regional security. This is especially true when existing routes and markets for cross-border smuggling of foodstuffs are exploited by criminal groups, including non-state armed actors, for trafficking in high profile items such as drugs and arms.[32] Examples include the lucrative sugar smuggling business in the Kenya–Somalia borderlands, which have been attributed to Al-Shabaab militants,[33] and smuggling of subsidized foodstuffs in the Maghreb region as an enabler of organized crime and global illicit trade networks.[34]

Case study: Liquid gold? Investigating fraudulent olive oil and the 'extra-virgin' label

One of the best-known examples of OCGs entanglement in food fraud is the production of fraudulent olive oil, particularly the extra-virgin variety, which requires use of mechanical processes with no solvents or similar aids. By using solvents to extract inferior grades of olive oil from the waste produced by legitimate processing facilities, Italian and other OCGs are able to present the final substandard product as being "extra-virgin."

OCGs also exploit the fact that outside of olive-growing countries in the Mediterranean, familiarity with the features of extra virgin olive oil is often poor, which facilitates the sale of low-quality products to unaware consumers. By doing so, criminal syndicates unfairly compete with legitimate producers, which are often driven out of the market. Moreover, in countries such as the US, the risk of being sanctioned is lowered by the fact that labels such as "extra virgin" are not as tightly regulated as in European countries, which restricts the ability of law enforcement/inspection authorities to intervene.[35] As a result, it is estimated that, in the US market, 75-80 percent of the "extra virgin" olive oil imported from Italy is not true extra-virgin.[36]

3.2 Corruption

Bribery of regulators and the assistance of corrupt public officials in placing illicit products in the market endangers food supplies and can have wide-ranging consequences that go beyond a specific country's borders. Researchers at AgriFutures Australia have argued that "the more prevalent corruption and organised crime are in a country, the more plausible it is that fraudulent ingredients and/or products will pass through any food control systems in place in that country."[37]

Despite the presence of strong anecdotical evidence about the links between the illicit trade in agri-food and corruption, further research should be conducted to determine the broader role of corruption in food fraud/adulteration practices, including its potential relevance in the context of laboratories in charge of detecting the presence of adulterated substances and regulatory authorities in charge of inspecting in food-processing factories.

Case study: Unraveling Brazil's food industry scandal – operation flesh is weak

In 2017, Brazil's Federal Police conducted raids and searches as part of a probe of food processors – among them BRF SA, the world's largest poultry exporter, and JBS SA, the world's No. 1 meatpacker – accused of bribing regulators to loosen oversight by ignoring the adulteration or expiration of processed foods. Searches were carried out across six Brazilian states in "Operação Carne Franca", or "Operation Flesh Is Weak", deploying more than 1,100 officers for 194 raids and 38 detention orders. According to the Federal Police, this is the largest operation ever carried out.[38] Police said "watchdogs in the food-producing states of Paraná, Minas Gerais and Goiás openly helped producers place adulterated products in the marketplace."[39] Food processors bribed state food safety auditors to issue fake sanitary permits, forgo normal oversight work, and turn a blind eye to practices like exporting meat contaminated with salmonella to Italy. Investigators also gave examples of the practices by regional food processing companies to market "a product labeled turkey sausage that had chicken and soybean protein substituted for much of the turkey," and "adulterating expired meats with a type of acid that investigators said has been linked to cancer," with these products then being sold to schools in the southern state of Paraná.[40] In sum, the charges included: misrepresenting products' nutritional values failing to meet hygiene standards in slaughterhouses; repackaging of out-of-date meat; tampering with the meat's color and smell with acid and potentially carcinogenic chemical substances; and the overuse of harmful additives.

Authorities reported that bribes were channeled to the Brazilian Democratic Movement Party. As a result of the investigation, the Ministry of Agriculture removed 33 law enforcement agents from their posts, and information in the case points towards two officials in the ministry spearheading the corruption scheme. Brazilian federal judge Andre Duszczak ordered the arrests of top BRF executives including Pedro Faria, formerly chief executive, and Helio Santos Junior, who had previously resigned from his post of vice president of global operations.[41]

Two years after the raids, BRF SA admitted to bribing food inspectors with bank deposits and health benefits. Police investigations showed that the company paid BRL 19 million (USD 4.56 million) in bribes up until 2017. In 2019, 12 BRF plants were still banned from selling meat products to the European Union following the investigation. According to police, 39 of the 60 inspectors targeted in the investigation remained on active duty.[42]

Brazil is the world's largest beef and chicken exporter, and Operation Carne Franca resulted in a sharp drop in exports once the investigation was made public. Following restrictions by key importers of Brazilian meat, weekly average exports of pork and poultry dropped by 22 percent.[43]

3.3 Money laundering

As is the case with other illicit trade sectors, proceeds from food smuggling and fraud need to be laundered as a pre-requisite for criminal actors to reinvest them in the legal or illegal economy.

In England, public authorities have identified the food supply chain as a vehicle for the commission of criminal activities beyond food crime as it is legally defined. The National Food Crime Unit, in particular, mentions links between "food businesses and organised crime groups whose main activity is not in itself food crime." Accordingly, criminal syndicates have been observed exploiting restaurants for money laundering purposes as well as using food cargo to hide the transport of drugs. A similar situation has been noticed in Italy, with food supply chains being abused to commit a range of offences including extortion and money laundering.[44]

3.4 Forced Labor

Under this project, no specific information was made available on the use of forced labor practices in illegal agri-food supply chains. Further research and data-gathering efforts should determine the extent to which food smuggling and food fraud conduct rely on such practices.

4. Impact on the UN Sustainable Development Goals

Illicit trade in agri-food has both direct and indirect adverse impacts on the Sustainable Development Goals (SDGs). Below is an overview of how various SDGs are affected.[45]

- **SDG 1 and SDG 2.** *No poverty and zero hunger.* Unsustainable food production patterns contribute to declining arable land and natural resource depletion as well as deterioration of soil, water and biotic resource bases on which all food production depends. Illicit trade in agri-food products perpetuates the vicious cycle of hunger and poverty, slowing down human development.
- **SDG 3.** *Good health and well-being*. Food fraud can have severe effects on people's health and well-being. In the US, for example, the selling of salmonella-contaminated peanuts caused a nationwide salmonella outbreak that sickened hundreds and killed 9 people. Fake infant milk powder, vegetable oil made of recycled oils unfit for human consumption and formalin—an embalming agent used to keep meat and fish free from flies and seemingly fresh for days—are other examples of how adulterated food supplies can contribute to malnutrition. Food fraud can also be the origin of serious indirect impacts on human health. Long term exposure to low-level toxic contaminants or the continuous omission of active or beneficial ingredients, such as preservatives or vitamins, can have harmful health consequences. Likewise, health risks emerge when unlabeled or adulterated ingredients cause consumer allergy, intolerance, or sensitivity.
- **SDG 8.** *Decent work and economic growth.* Fake, substandard, smuggled and illegal agri-foods distort and destabilize food markets and cost the global food industry an estimated USD 30 to 40 billion each year, undermining economic growth, costing jobs and hurting entire sectors of the economy. For a legitimate company, this form of illegal competition reduces sales and employment opportunities and disincentivizes investment, disproportionately affecting small-scale food producers, especially in developing countries. The Ivory Coast, for example, suffered an estimated loss of

125,000 tons of cocoa to smuggling in the 2017-2018 season, equivalent to 9 percent of the harvest. These losses are significant in a country where cocoa accounts for roughly 20 percent of exports and where, according to the IMF, a 1 percent change in revenue from beans' exports can lead to a 0.63 percent shift in government spending.

- **SDG 12.** *Responsible consumption and production.* Consumers' ability to make educated and eco-friendly choices are undermined when certificates of origin are falsified, quality assurance programs hampered, claimed ingredients diluted with a cheaper product or entire species substituted. Seafood mislabeling offers a paradigmatic example of food fraud depriving consumers of their ability to make informed choices, while at the same time threatening ocean sustainability by creating or sustaining markets for illegally sourced fish.
- **SDG 16.** *Peace, justice and strong institutions.* Organized crime (See Section xx) plays a major role in the illicit trade of agri-food products, undermining SDG Target 16.4 (combat all forms of organized crime), as well as SDG Target 16.1 (significantly reduce all forms of violence and related death rates everywhere). Given its linkages to organized criminal activity, illicit trade in agri-foods can underpin wider risks to national and regional security, further undermining SDG Target 16.3 (promote the rule of law) and SDG Target 16.5 (reduce corruption).

5. Institutional framework

This section features a selection of some of the most relevant initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

Food and Agriculture Organization (FAO)/World Health Organization (WHO)

Codex Alimentarius

The Codex is a collection of internationally-agreed food standards aimed to protect consumer health and ensure fair practices in the food industry. Adopted by the Codex Alimentarius Commission (CAC) – the inter-governmental body responsible for all matters regarding the implementation of the Joint FAO/WHO Food Standards Programme – Codex standards are considered as "not more trade restrictive than necessary" for the purpose of countries' compliance with their international trade-related obligations. As Codex standards are voluntary, countries need to incorporate them into their legislation for them to become legally binding. While no Codex standard is specifically devoted to food fraud, numerous standards include elements of process-based and product-based quality that are susceptible to being used fraudulently. Domesticating these standards can thus increase national agri-food systems' resilience against food fraud.

United Nations

United Nations Guidelines for Consumer Protection (UNGCP)

Originally adopted by the General Assembly in 1985, the UNGCP have been expanded by the Economic and Social Council in 1999 and revised by the General Assembly in 2015. The UNGCP provides general and specific provisions on food fraud. Key principles include:[46]

- Protection of consumers' economic interests and access to adequate information (Para. 5 (d) and (e)).
- Responsibility for businesses to deal fairly and honestly with consumers (Para. 11).
- Member States' responsibility to establish enabling legal and policy frameworks (Para. 4).
- Member States' duty to encourage consumer organizations to monitor adverse practices, such as the adulteration of foods, false or misleading claims in marketing, and service frauds (Para. 21).
- Development of an international framework for combating fraudulent and deceptive commercial practices (Para. 86), which should provide national consumer protection enforcement agencies with the authority to investigate, pursue, obtain, and where appropriate, share relevant information and evidence, particularly on matters relating to cross-border fraudulent and deceptive commercial practices affecting consumers (Para. 88).

European Union (EU)

EU food safety legislative, policy and institutional framework[47]

An extensive body of EU-wide law covers the entire food production and processing chain within the EU, as well as imported and exported goods. While EU countries are expected to implement the existing standards and enforce them, the EU audits the application and effectiveness of the established laws and controls. The EU also provides training to competent responsible EU and international authorities.

EU food safety policies and actions are clustered in 4 categories:

- **Food hygiene.** Food businesses, all along the supply chain, are required to comply with EU food law, including companies importing food from outside the EU.
- **Animal health.** Sanitary controls and measures for pets, farmed animals and wildlife monitor and manage diseases, and trace the movement of all farm animals.
- **Plant health.** The early detection and eradication of pests seeks to prevent spreading and ensure healthy seeds.
- **Contaminants and residues.** Monitoring keeps contaminants away from food and animal feed.

The European Food Safety Authority (EFSA) provides independent risk assessments and scientific advice, forming the basis for the EU's food safety standards.

EU Alert and Cooperation Network (ACN)

Since March 2021, the exchange of information among EU Members States' competent authorities is facilitated by the EU Alert and Cooperation Network (ACN). Managed by the European Commission, which also ensures technological support, the ACN is composed of three intertwined networks:

- **Rapid Alert System for Food and Feed network (RASFF).** It enables competent authorities to rapidly exchange information on serious direct or indirect risks to human health in relation to food or feed, or serious risks to human or animal health or to the environment in relation to feed;
- **Administrative Assistance and Cooperation system network (AAC).** It allows competent authorities to share information (and subsequently investigate and take action) on cross-border violations of the EU agri-food chain legislation that do not present a priori a health risk;
- **Agri-Food Fraud Network (FFN).** In cases where potentially fraudulent or deceptive practices are identified, Member States can cooperate to further investigate the fraud suspicions by reporting the case in the Agri-Food Fraud Network.

Members of the ACN are all the EU Member States, the EEA countries (Norway, Iceland, and Liechtenstein), the European Food Safety Authority (EFSA), Switzerland and the European Commission (which also manages the network). All ACN members have appointed dedicated single Contact Points with out-of-hours arrangements (24/7) to address any emergency-related notification.

The year 2021 recorded the highest number of exchanges ever reached in the activity of every component of the ACN.

Association of Southeast Asian Nations (ASEAN)

Rapid Alert System for Food and Feed (ARASFF)[48]

ARASFF is the information-exchange platform used by ASEAN Member States on identified risks found in food or feed being traded, and measures taken to alleviate or eliminate them. While it pursues the same objectives as the EU Rapid Alert System for Food and Feed (RASFF), it works in a different manner. While notifications under the EU RASFF are mostly initiated by Member States and sent to the European Commission (Health and Consumer Protection) for assessment before being issued, ARASFF notifications are initiated, assessed and issued directly by National Contact Points of concerned network members. The notifications thus appear on ARASFF website in real time as soon as they are submitted to the website.

5.2 Select national responses

United States' legislative framework on food safety

To ensure food safety, the US relies on a number of laws and regulations. These include:[49]

- **Federal Food, Drug, and Cosmetic Act.** Section 402(b) of this act provides common charges for economically motivated adulteration. A food product is considered adulterated if one of its valuable ingredients is left out or taken out. Section 403 deals with misbranded food items.

- **FDA Food Safety Modernization Act (FSMA).** Under this act and its implementing regulations, food companies are required to establish preventive controls against hazards intentionally introduced for the purpose of economic gain in both human food and animal food. FSMA rules covering these hazards are separate from the Mitigation Strategies to Protect Food Against Intentional Adulteration rule, which cover intentional conduct meant to cause wide-scale public health harm, such as acts of terrorism targeting the food supply chain.
- **Labeling Regulations.** They determine how manufacturers may label their products. One regulation, for example, requires companies to indicate the percentage of juice on the label of any drink that contains fruit or vegetable juice.
- **Standard of Identity Regulation.** It establishes standards of identity that lay out what a product must contain if it is represented as a certain food.

Moreover, to control the safety and labelling requirements of imported food, the US Code requires all facilities that produce, store or otherwise handle food products to be registered with the Food and Drugs Administration (FDA) and to provide them with a prior notice of incoming shipments. This prior notice also needs to be provided by the importing food business operator when the imported food product is purchased by an individual consumer and shipped by a foreign operator (USC Title 21, 381(l) and (m)).

Canada's Safe Food for Canadians Regulations (SFCR)[50]

Entering into force in 2019, the SFCR have aligned Canada's food safety regulations with those of its main trading partners, including the United States, European Union, Australia and New Zealand.

The SFCR benefit the food industry as they reduce administrative burdens by replacing 14 sets of regulations with one. They also set forth new requirements on licensing, traceability and preventive controls, broadly covering food importing or exporting businesses as well as those preparing food to be distributed across provincial or territorial boundaries. Most businesses with CAD 100,000 or more in gross annual food sales are required to prepare and maintain a written preventive control plan.

The entity in charge of enforcing the SFCR is the Canadian Food Inspection Agency (CFIA). The new regulatory framework is expected to facilitate the CFIA's task to identify food safety risks and thus better target inspections and law enforcement actions.

China's 2015 legislation on food e-commerce[51]

Adopted in 2015 as an amendment to its 2009 Food Safety Law, China's legislation on food e-commerce distinguishes between the legal obligations of Internet platforms providers and those of the online food business operators (FBOs) operating through those platforms.

Under article 62, Internet platforms are basically made responsible to ensure that only legitimate FBOs can rely on their services by taking such actions as registering the legal names of the relevant FBOs and checking that the necessary permits have been obtained.

When a platform becomes aware of food safety violations, which may include fraudulent conduct, it is obligated to stop providing its Internet services to the FBO in question and report it to the local food and drug authority. Failure to comply with these requirements results in monetary fines or the closing of the Internet platform.

Concerning the FBOs, the legislative amendment sets forth a number of obligations, including the prohibition to publish food-related information that is inconsistent with that shown on the food labels (Article 17).

Additionally, any consumer who considers that their rights and interests have been damaged through a purchase via a third-party platform may claim compensation against the distributor or producer. If the third-party platform provider fails to provide the real name, address and valid contact for the admitted food distributor, it may become jointly liable for any damages caused to consumers and, subsequently, recover the damages from the infringing FBO.

The 2015 amendment also strengthens online food controls by allowing officials from the competent food safety agency to pose as consumers and order food products over the Internet and inspect both inspect the packaging and product to make sure that they meet the food safety standards (Article 25).

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

To protect their supply chains from risks associated with food smuggling, fraud and other unethical/illegal behavior, food industry companies – and related business associations – employ a variety of measures. These include:

Food safety/security management systems

The food industry is increasingly adopting approaches and processes to mitigate the risk of their supply chains being exploited for food fraud. These strategies, which had originally been employed to protect supply chains against accidental/non-intentional poisoning/contamination on the basis of Hazard Analysis Critical Control Point (HACCP) principles, are now being expanded towards the management of deliberate/fraudulent conduct.

Nestlé, for example, is implementing a program aimed at preventing and reducing the risk of economically motivated adulteration. The program is structured around a vulnerability assessment, the definition of mitigation measures and the regular review of both.[52]

The Barilla group has set up a "fraud control policy" to strengthen fraud risk awareness and knowledge, and improve the internal control system for the prevention, detection and investigation of potential and actual frauds against the group.[53] In particular:

- Commercial fraud is defined as "intentional and deceptive practices aimed at product tampering, trademark and design counterfeiting, and/or food quality misrepresentation, so as to threaten consumers' health and damage Barilla's brands and reputation";
- The Policy applies to all Barilla's employees and consultants, vendors, contractors, customers, and any other company stakeholders;
- All stakeholders are expected to report their suspicions of potential frauds or irregularities through a dedicated e-mail box. All information received as well as the identity of reporting persons is kept confidential with a view to protecting whistle-blowers from potential retaliatory action.

Industry-wide information sharing platforms

Set up in 2015, the Food Authenticity Network is an open access website that collects global information on food authenticity testing, food fraud mitigation and food supply chain integrity. With its 959 members from 45 different countries, the Network is recognized by the Codex Alimentarium Commission as a "leading example of an integrity network." The Food Authenticity Network is driven by LGC (a leading global life science tools company) and funded through a public-private partnership, which enables the sharing of best practices for the benefit of all stakeholders, helping to raise standards worldwide.[54]

Another knowledge-sharing platform is the Consumer Goods Forum (CGF), which convenes 42 retailers and manufacturers. Based on its multi-stakeholder working groups and its website, the CGF has contributed – since its establishment in 2000 – to sharing and building food safety expertise and professional networks.[55]

Standard harmonization and certification procedures

Recently, the development of food security standards has been expanding as part of the industry response to the growing request for assurance of safe and legal food at all stages of the supply chain. Business compliance with these standards is facilitated by programs aimed at the certification of management systems. Certification also enables the food industry to improve organizational performance and protect its reputation.

- A specific industry initiative is the International Featured Standards (IFS). These were developed jointly by suppliers and retailers and include eight different food and non-food standards, including fraud mitigation measures, covering various processes along the supply chain. Numerous IFS standards have incorporated the need for product fraud mitigation measures. IFS are used by industry stakeholders to meet new requirements for quality, transparency and efficiency resulting from global production processes. IFS certification is open to food manufacturers, brokers, logistics providers, manufacturers of household and hygiene products as well as wholesalers. In 2018, IFS released the Standards Product Fraud: Guidelines for Implementation, which are specifically intended to assist the users of IFS standards to understand the existing requirements in the field of food fraud.[56]
- Based on internationally recognized standards such as ISO and Codex Alimentarius, the Global Food Safety Initiative (GFSI) has built benchmarking requirements that form a widely accepted understanding of what constitutes a solid food safety certification program. GFSI's certification program entails a simplified "once certified, recognised everywhere" approach. This concept aims to reduce inefficiencies from duplication of audits and reduce trade barriers.[57]
- Developed by Bureau Veritas, one of the world's leading certification bodies, the Foundation Food Safety System Certification 22000 (FSSC 22000) offers a certification scheme for the auditing and certification of Food Safety Management Systems (FSMS). It specifically targets the food, feed and packaging manufacturing sector as well as the storage and distribution, catering and retail/wholesale sectors. FSSC 22000 is GFSI benchmarked, recognized and accepted by the largest food brands and retailers.[58]

Supply chain traceability

Companies in the food industry are progressively adopting mechanisms that aim to achieve fully traceable supply chains, where possible down to individual farmers.

- Campbell's suppliers, for example, are expected to disclose the geographical location of facilities producing raw materials as well as the origin of raw materials within their own direct supply chain. Suppliers may also be asked to provide mapping back to the origin of materials to assess upstream supply chain compliance.[59]

Moreover, some food companies seek to monitor issues faced by their suppliers by activating "informal intelligence networks." Key sources of information are "boots on the ground" employees, ingredient brokers and the analysis of customer complaint trends. Existing employees within a certain market, in particular, can provide valuable insights while brokers that deal with day-to-day issues can contribute timely local information. As to customer complaints, these can be critical tools to identify and address problems at an early stage.

Responsible sourcing

Many food companies have set forth specific policies to ensure suppliers comply with a variety of requirements and internationally recognized good practices in relation to a range of issues such as anti-bribery, conflict of interest, respect of human rights, forced labor, environmental and ethical standards.

- Kraft Heinz employs three main tools, namely: a global code of conduct, an anti-bribery policy and Supplier Guiding Principles. This latter tool is based on industry best practices and internationally recognized standards (including the UN Guiding Principles on Business and Human Rights, the International Bill of Human Rights, and the principles set forth in the International Labour Organization's (ILO) Declaration on Fundamental Principles and Rights at Work). All suppliers are required to manage their subcontractors and supply chains in a manner consistent with the Guiding Principles, whose acceptance is mandatory as part of any supplier contractual arrangements or purchase orders with Kraft Heinz. Those arrangements notably authorize Kraft Heinz to engage in monitoring activities per supplier site on an annual basis, including on-site audits with reasonable notice. Kraft Heinz reserves the right to conduct additional audits in order to further investigate potential noncompliance with the Guiding Principles, review the implementation of corrective action, or to comply with regulator or other third party inquires. Moreover, suppliers are required to take a proactive management approach in maintaining compliance, for example by promptly reporting any known issues of non-compliance.[60]

- Under Campbell's Responsible Sourcing Supplier Code, compliance by suppliers is monitored through a 3-step methodology which places emphasis on higher-risk suppliers:
    - **Step 1: Risk assessment.** In order to determine the social and environmental risk level posed by each supplier, a variety of factors are taken into account such as suppliers' country- and industry-specific risks as well as their compliance management systems. Supplier Self-Assessment Questionnaires may be used to further refine information related to suppliers that have been provisionally designated as medium or higher risk. All new suppliers will receive an initial assessment before becoming a Campbell Supplier and Suppliers may be subject to re-assessment annually.
    - **Step 2: Audits.** Audit resources are allocated based on determined levels of risk.
        - **Lower Risk.** Suppliers in this category are normally not expected to complete a responsible sourcing audit on a consistent schedule. Each year, however, a sample of lower risk suppliers is chosen to undergo an audit.
        - **Medium Risk.** Suppliers in this category shall either complete a desktop audit or a site-based audit.
        - **Higher Risk.** Suppliers who are identified as higher risk are required to complete a responsible sourcing audit. In this case, the audit is carried out by a third-party firm designated by Campbell. Suppliers are then expected to fully cooperate and provide auditors with the appropriate records requested and allow for confidential interviews in connection with the audits.
    - **Step 3: Corrective actions and consequences.** Depending on their findings, audits are given different color ratings, which correspond to different sets of actions that suppliers are required to take.

Any corrective action plan issued by suppliers is reviewed and approved by Campbell and a target date for re-evaluation is set forth. Suppliers' failure to implement the recommended corrective actions may result in the right to suspend or terminate any purchases from it.[61]

6.2 Business driven technological solutions

The food industry employs a variety of technology-based tools to mitigate the risk of fraudulent food infiltrating its supply chains and eventually landing on consumers' tables. Critically, the recent introduction of portable testing devices, including those using infrared, ultraviolet and visible light, is increasingly moving testing from the laboratory to the field and enabling risk-based sampling.

- **DNA barcoding.** Most commonly used in the fishing industry, DNA barcoding employs a short genetic sequence of mitochondrial DNA to identify the fish as belonging to a particular species, thus providing a potentially very accurate method of detecting cases of food fraud by substitution. This technique can be used on both raw and cooked products.[62]

- **Infrared spectroscopy and mass spectrometry.** These constitute leading tools for identifying contaminants in food that contain little or no DNA, including oils and minerals. They can also offer insight into the origins of particular batches via isotopic analysis.[63] Nuclear Magnetic Resonance spectroscopy, in particular, can quickly analyze mixtures at the molecular level without the need to go through a separation or purification process. The success of this application largely depends on the availability of adequately populated databases.[64]
- **Blockchain.** Blockchain solutions are increasingly being tested within the food industry as promising tools in food fraud prevention. By encrypting each transaction or "block" with a unique, non-manipulable identifier, blockchain provides a decentralized, transparent, and traceable chain of custody, starting with the source (assuming the producer is not engaging in fraud). A particularly interesting feature of blockchain is its ability to track products in real time, removing the need for often time-consuming and potentially fraudulent document processing.[65]

7. Recommendations

The following are focused recommendations to help combat illicit trade in agri-food by government and private entities.

- **Strengthen domestic legal frameworks to prevent and counter illicit trade in agri-food products.**
  The illicit trade in agri-food products, and food fraud in particular, is often subject to regulatory measures and sanctions scattered in different pieces of countries' normative frameworks (e.g., legislation on food safety/consumer fraud, customs, intellectual property, criminal law such as theft). In evaluating the adequacy of a fragmented legal framework to address the phenomenon, governments are encouraged to prioritize the following components:[66]
    - **Adopt a definition of food fraud.** Even if a country already can already apply sanctions to conduct linked to food fraud, adopting a clear-cut definition of food fraud may provide additional focus on the problem, highlight its gravity and, potentially, facilitate the adoption of more targeted policies and legislative instruments.
    - **Develop/strengthen the regulatory framework to counter food fraud via e-commerce.** This includes subjecting food e-commerce platforms to the same requirements as traditional/offline marketplaces. Governments may also address the issue of the liability of different stakeholders for food fraud, which implies determining the extent to which the providers of e-commerce platforms need to be held responsible in addition to food business operators.
    - **Review national food safety and quality legislation** to ensure compliance with Codex Alimentarius.

- **Use the avenues offered by consumer protection legislation to shield the public from food fraud.** This type of legislation typically protects consumers from unsafe and hazardous goods and services, granting them the right to be informed about issues such as quality, quantity and price and to seek redress against fraud. An important tool to uphold consumers' rights protection is food labeling whereby packaged food need to show a minimum amount of information about product identity, content, intended use and any appropriate food safety considerations. Mandatory, minimum requirements are important to protect consumers' health. Regarding voluntary labelling, the government should provide guidance to prevent inappropriate labels. The FAO has developed a specific toolkit on food labelling.

- **Establish or enhance national food control systems:**
  - Governments should design a national food control system based on the following pillars:

    i) Appropriate legal and policy instruments (See previous recommendation on strengthening domestic legal frameworks).

    ii) Sound institutional frameworks as well as financial assets, equipment, and infrastructure (including access to laboratories).

  In particular, the FAO recommends that "the regulatory authorities designated under the food control system (also known as competent authorities) help ensure food safety and quality along the food chain and manage food safety hazards, fraud issues, emerging risks and emergencies. This work includes oversight and inspection of Food Business Operators (FBOs), information collection processes that contribute to a better understanding of the food chain; and programs aimed at preparing for and managing food safety emergencies. In addition to mandatory activities performed by competent authorities under their regulatory mandate, the "non-regulatory" activities of that system also need to be taken into consideration; these include communication and capacity development programs. Processes for constructive interactions with stakeholders (such a FBOs, consumers and the international community) are important to allow the system to take into account the evolving needs of both national and international stakeholders, to inspire confidence and to keep them well informed about their responsibilities."[67]

  To support in the development of effective and comprehensive food control systems, governments can request technical assistance to the FAO.

- **Design consumer awareness programs, especially to warn against risks in food e-commerce**

  When food is delivered via postal services for self-consumption, national legislation sometimes provides for an exception whereby the products in question escape official controls/inspections. This substantially shifts to consumers the burden of identifying fraudulent products and reporting their suspicions to the competent authorities. As a result, it is important to "empower" consumers in recognizing at least the most common patterns of food fraud committed online, and granting the public adequate channels to obtain redress, whether through private dispute resolution mechanisms, consumer protection legislation or the national justice system.[68]

- **Improve regulatory/inspection bodies' capabilities to detect illicit trade in agri-food**

  Patterns of illicit trade in agri-food should be identified by drawing from a broad pool of sources such as consumer complaints, industry reports, media articles, academic and scientific publications, databases, etc.

  The ability of inspection and regulatory bodies to detect food fraud should also be enhanced through the execution of routine and/or targeted product samplings, and by checking that the competent authorities can rely on sufficient powers to carry out inspections.

  Inter-agency coordination and information exchange is also critical in the identification of new cases of and trends in food fraud. In the US, for example, the Food and Drugs Administration collaborates as a matter of routine with other federal agencies such as the National Oceanic and Atmospheric Administration and the Department of Justice as well as with foreign regulatory and inspection bodies in relation to imported products.[69]

- **Enact tighter supply chain controls and food management systems**

  Food companies should work proactively towards mitigating the risk of food fraud not only within their own organizations, but also across the entire food value chain. Various practical tools and guidance materials have been developed to support the food industry in designing and implementing the appropriate supply chain controls (e.g., US Pharmacopeia, SSAFE, BRC). Methodologically, such controls should follow a three-pronged approach based on:

    - Conduct of vulnerability assessment.
    - Design and implementation of mitigation strategies.
    - Regular reviews of the food fraud management system.

  The conduct of vulnerability assessments can notably benefit from the adoption of a Vulnerability Analysis and Critical Control Point (VACCP) system, which typically entails:

    - Drawing up of lists of all ingredients and materials used in the manufacturing process.
    - Identification of types of fraud/adulteration potentially affecting those ingredients and materials and determination of associated risk levels (e.g., based on length and complexity of the supply chain).
    - Design and implementation of preventive measures (e.g., decision to obtain food products from trusted suppliers only).

  Food management systems should also provide for the possibility to issue alerts when a fraudulent material is detected within the supply chain and promptly communicate the problem/incident to their partners to prevent the adulterated material from reaching other parts of the value chain. Moreover, fraud incidents should be promptly reported to the competent local authorities and/or national food crime unit for further investigation.[70]

- **Apply technology-based fraud-detection solutions while knowing their limitations**

  Detecting adulterated/fraudulent food with a naked eye or by smelling is often challenging – if not impossible – due to the ability of food fraudsters to deceive consumers. Modern technologies are thus a critical component of current efforts to remove illegal agri-food products from the distribution chain.

  An increased/more systematic use of deployable on-the-ground devices for adulteration-detection purposes can facilitate and speed up fraud mitigation efforts by often doing away with the need to send food samples to laboratories. At the same time, the effectiveness of such portable devices depends on the existence of well-populated databases against which the sample analysis can be referenced. Such databases should notably contain high-quality data relating to both authentic products and adulterated products.

  Blockchain technologies are also potentially game-changing tools on condition that they cover all points along the supply chain. In ocean transport, for example, to be effective a blockchain solution would have to encompass all of the nodes of the distribution system, i.e., producers, freight-forwarders, ports and shipping firms, distributors, wholesalers and merchants.

  It is also important that countries and technology providers strive to overcome the obstacles that often stand in the way of using them effectively. Key challenges include the need to adopt cost-effective solutions that can be deployed all along the supply chain (plus costs for maintenance and upgrades). As has been noted, "the cost of adopting blockchain technology will no doubt be passed along to the consumer, and therefore awareness of blockchain's benefits must be made available to ensure consumer buy-in."[71]

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II. PESTICIDES

1. Overview and findings

Illicit pesticides and trade dynamics

What are illicit pesticides?

The OECD describes an illicit pesticide as any product that is not legal in the country where it is "placed on the market."[8] This includes:

- **Counterfeit and fake pesticides.** Illegal copies of a branded, legitimate pesticide. Counterfeit or fake pesticides are characterized by high-quality fake branding and packaging and may therefore be difficult to distinguish from a legal product.
- **Unauthorized pesticides.** Those that are not authorized for use by regulatory authorities in the country in which they are "being placed on the market." In most countries, pesticides must be registered by a national government agency, which ensures they meet the safety standards in force.
- **Obsolete pesticides.** Those that are no longer authorized or fit for use. Pesticides become obsolete for several reasons, including product deterioration or degradation, deterioration of the packaging and label, de-registration of the product – due to harmful health or environmental effects – or revised product use recommendations.

The size of the trade, combined with regulatory oversight, and inconsistent health and environmental monitoring, make illicit pesticides an important and ongoing challenge to producers, regulators, distributors, and users.

The proliferation of illicit pesticides presents a range of threats to farm yield, farmer health and safety, reputation of industry and environmental systems that support human, animal, plant, and aquatic life. Farmers face potentially irreversible damage to their crops, fields, and livelihoods, with large scale losses increasing poverty and contributing to social unrest in rural areas.[1] Further, illicit pesticides generate a number of serious economic and social impacts and undermine the importance and value of legitimate crop protection products on sustainable development, global stability and national food security.[2]

Illicit trade in pesticides is a rampant problem worldwide. CropLife International and the European Crop Protection Association estimate that five to nine percent of the market consists of illegal pesticides, often due to counterfeit products with fake labels and packaging. Another estimate suggests that more than 25 percent of the volume of pesticides in circulation in parts of Europe is illicit.[3] In 2021, TRACIT participated in a seminar conducted by the University of Cape Town, with support from the OECD – on illicit pesticides with private and public sector entities.[4] All participants confirmed that trade in illicit pesticides is one of the fastest growing activities of organized crime. However, not enough research has been done to estimate the true extent of the problem.

While counterfeit or illegal trade seems to be the most pervasive in India, China, Africa, Ukraine, Paraguay, Uruguay and Russia, avenues for illegal trade can open up anywhere.[5] A representative of a pesticides trade association stated, *"We should not blame a country, as the source can shift. Countries that do not have strict import regulations and law enforcement tend to be the most susceptible to the import of counterfeit products."*

An assessment funded by the industry though CropLife Brazil, for example, revealed that 24% of pesticides in that country are illicit.[6] A 2021 document issued by the Crop Protection Products Industry and the National Citizen Observatory (ONC), revealed that the legal market in Mexico is valued at approximately 1.4 USD while, the illegal market represents an average share of around 15% to 20% of the market.[7]

2. *Modus operandi*

2.1 Supply chain modalities

The structure of pesticide supply-chains is changing. Global supply chains are becoming increasingly complex and can involve up to twenty-five different entities – ranging from manufacturers to shippers and distributors – with production, shipment, assembly, and distribution points scattered over multiple geographical locations. The number of parties, transfers, and stops involved in the pesticide trade is posing significant challenges to regulatory and control efforts, including the identification of illegal products.[9]

Similarly, the illicit trade in pesticides involves many actors at different stages of the supply chain - from production to import and distribution – through the involvement of illegal producers, corrupt agronomists, or illegal waste management companies. Enabling factors include corruption, officials not conducting checks for IPR violations, and falsification of documentation, such as product registration or the validity of accompanying certificates.[10] capabilities to mix extraneous materials, which may not be feasible at the retail stage."[20]

Case study: From ship to search: the law enforcement practices in uncovering illicit pesticides at Antwerp port

As reported by companies interviewed for this study, inspectors looking for illicit pesticides in the port of Antwerp routinely check consignments with the assistance of customs officials. As the massive volumes that come in each day prevent them from inspecting all containers, they – along with Customs – identify "red flags" and feed them into the risk management systems (RMS). Parameters include name of the product, import documents, names of companies, and weight of the consignment. If any of these appears to be incomplete, not properly declared under the right codes, or includes key terms, the system will flag it.

The key indicator that a consignment is illicit is that documentation cannot be properly verified – especially when the place of manufacture does not coincide with the certificate of origin and registration certificate. As there is no method by which inspectors can verify where the products were produced, they are flagged as a suspect consignment.

Additional challenges are created by the fact that shipping companies at the port of origin do not properly verify documentation, which makes inspectors' task at destination points extremely laborious.

Disguising counterfeits by mixing them with unknown substances makes detection especially difficult. Also, while porous borders are a problem, law enforcement agencies have highlighted additional challenges due to lack of awareness among farmers who are often the target of illicit traffickers and do not know where legitimate products can be bought.

Indeed, criminal groups employ various sophisticated techniques to disguise the origin and provenance of illegal pesticides, thereby hindering product traceability along the supply chain. These techniques include the use of deliberately complex and long transit routes, crossing borders of multiple countries, and relying on several modes of transportation. Forged transport documents are used to conceal the point of origin. Moreover, criminal actors avoid detection by using distribution warehouses and self-storage facilities in transit countries for the assembly and distribution of illegal pesticides. They also refrain from declaring products for customs control at checkpoints.

Case study: A closer look at the illicit pesticide operations in the EU

The main origin of pesticides – which in the EU are covered under the term "plant protection products" (PPPs) – imported from non-EU countries is China. The formulation of illegal PPPs from legal imports of active substance is an emerging problem, with the resulting PPPs often being placed on the market through misuse of the parallel trade system.[11] Further, the ability to legally repack products after importation into the EU makes it complicated to verify the content and the nature of the product.[12]

Illegal PPPs appear to flow freely in EU countries following entry through large seaports, with the EU Member State of first arrival rarely being the Member State of final destination. There is considerable evidence to suggest that the parallel trade system is misused in order to both move illegal PPPs around the EU and to bring them to markets in destination countries. This is possible due to the differences in the implementation of the requirements to link the marketed parallel-traded product to the reference product batch at the time of sale. The networks involved in formulation of illegal PPPs from active substances and in illegal parallel trade are complex and cross-border in nature.[13]

Organized crime groups involved in counterfeiting pesticides also place false brand labels on their goods or labels in non-EU languages. The goods are subsequently imported by relying on fraudulent transport documents or are smuggled across the EU's external borders. Another common modus operandi is to import the product in bulk with fraudulent import declarations, and subsequently pack and label the product within the EU. In other cases, the trademark-bearing goods, such as bottles or bottle caps, are sent separately from the chemicals.[14]

The exposure to illicit pesticides is understood to be higher in developing countries as a result of a number of factors: insufficient regulation, lack of surveillance systems, lack of awareness and training for customs and other law enforcement personnel, inadequate access to information systems for verification and information sharing, poorly maintained or nonexistent personal protective equipment, lack of farmer awareness, and larger agriculturally-based populations.[15] Outlined below are some of the most common concealment methods used by traffickers to facilitate transport, disguise the origin and provenance of illegal pesticides, and hinder product traceability:

- Shipping ingredients and components separately for assembly and packaging at destination points. For example, enhanced inspection controls in Chinese ports have resulted in organized crime tactical changes in the distribution of illicit pesticide products, including components being shipped separately through multiple ports to obscure content, origins, and identity before landing in the ultimate market for the product.[16]
- Exploiting weaknesses in regulatory frameworks as well as poor oversight and control within legitimate supply and distribution chains.
- Customs agencies frequently report challenges in detecting and seizing illicit products because of the technical difficulties associated with distinguishing counterfeit pesticides from genuine ones.[17]
- Mis-declaring products and providing unclear and incomplete information in shipping documents. Most illegal products are not declared as "dangerous goods". Additionally, shipping documents may be unclear, and importing and exporting documents for the same shipment are often different/inconsistent, or fake names and misleading labels are used. This frequently creates significant challenges for authorities to stop suspicious shipments for sampling and analysis, to collect evidence of fraud and to prove illegality.[18]
- Smuggling of pesticides in some larger countries where borders are long and porous, and enforcement is difficult. To add to the complexity of the situation, often only the active ingredients are imported (under a false name/description) to avoid trademark counterfeiting/infringement, and the formulated products are prepared in the country of destination.[19]
- Breaking seals of legitimate pesticide parcels, removing the contents and replacing them with a copy with the exact same number of items.

Case study: Behind the shadows - the illicit trade in pesticides in African countries[20]

- Zimbabwe: Porous borders make illicit pesticides particularly hard to detect and seize. Illegal pesticides are traded mostly through street vendors. In most cases, they are either illegally imported or received in bulk through government or NGO agricultural support schemes, which are then repackaged and find their way on informal markets.
- Sierra Leone: The country lacks a legal framework to regulate the importation, registration, distribution, use and application of pesticides.
- Tanzania: Illicit trade in pesticides is observed in farms, agro-dealers' shops and storage facilities during inspections. Some illegal products are unauthorized for sale (unregistered pesticides with no labels or with labels but poor description), while others are counterfeit.
- Malawi: Cases of illegal pesticides often come to light through tip-offs, customs/border interventions as well detection by inspector at farms and in retail/warehouse shops.

2.2 Transport Dynamics

The maritime route is the most common mode of transport for illicit pesticides. These channels are abused for smuggling, mislabeling pesticides, and unofficial sales in end user markets. Rerouting of products is a common method in case of discovery. For example, if blocked, the importer claims the product is in transit and not for import.

The abuse of LCL (less-than-container-load) shipments generally, and NVOCC (non-vessel operating common carrier) shipments specifically, can help traders obscure their illicit activities. With LCL shipments, counterfeiters can intermingle illegitimate goods with legitimate goods, giving their shipments the superficial appearance of legitimacy. Using legitimate shipping services to move counterfeit goods means that counterfeiters need to mislead transport intermediaries and vessel operators into thinking the product being transported is something other than what it seems.[21]

While less information is available on the estimates of illicit pesticides being traded via in air travel, interviewed companies mention instances where their products have been smuggled through this route.

Case study: Flying under the radar: illicit pesticides air smuggling in Budapest[22]

A passenger aircraft from Budapest was found carrying cargo of illicit pesticides with a low flashpoint, i.e., the lowest temperature at which they can combust. Legitimate pesticides have flashpoint of 65 degrees and counterfeits generally have a flash point of around 25-26 degrees, which could have potentially caused a severe safety hazard to the passengers aboard the aircraft. When the plane refueled in the Middle East, 2 tons of illegal active ingredients were detected by the authorities who were looking for narcotics. As these items had a registered trademark, authorities were able to contact the brand owner. They noted that the offenders were using registrations associated with generic products that were registered in Russia or Ukraine for making counterfeits of higher value and for shipment back to the EU.

2.3 Hotspots

2.3.1 Online

Illegal actors increasingly sell their products directly to users via the Internet, which, in recent times, has become a major enabler for the distribution and sale of counterfeit and illegal pesticides.[23] For instance, illegal pesticides imported in the United States as a result of online sales on Amazon are estimated to be large in number, with nearly 4,000 violations of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) recorded over past last five years. Moreover, online sales of pesticides usually involve small parcels that do not always follow the same path as large shipments and often cross borders via postal or express services, reducing the effectiveness of traditional detection and seizure strategies.[24]

Illicit traders exploit vulnerabilities in online platforms by selling counterfeits, grey market sales and products that fail to comply with health or safety requirements. Carbendazim, for example, is banned in the EU, but is available online. This form of purchase evades sales bans and restrictions placed on suppliers and requirements on customers to demonstrate a certificate of competence, which is required to prove that the customer is trained to use pesticides.

Case study: EPA crackdown on illicit insecticides on Amazon's platform[25]

In January 2016, the US Environmental Protection Agency (EPA) issued a Stop Sale Order (SSO) against Amazon after discovering that certain unregistered or misbranded insecticide bait products were being offered for sale on its platform. After receiving the SSO, Amazon removed the products from the marketplace, prohibited foreign sellers from selling pesticides, and cooperated with EPA during its subsequent investigation. The orders, as well as EPA's engagement with the company, prompted Amazon to monitor its website more aggressively for illegal pesticides. As a result, Amazon has created a compliance program based on a sophisticated screening system backed by numerous trained staff. In October 2016, Amazon notified all customers who purchased illegal pesticides between 2013-2016 to communicate safety concerns and urge disposal. Amazon also refunded those customers the cost of the products in the amount of approximately $130,000.

2.3.2 Free Trade Zones

There is limited information available on the estimated illicit trade of pesticides facilitated through free trade zones (FTZs). However, interviewed companies reported that the problem of repackaging and relabeling of pesticides does take place in FTZs. Unilateral approaches to the problem of regulating pesticide exports in FTZs are not helping, as these items are easily repackaged and translocated from a FTZ to another country, where their trade continues.

2.3.3 Postal systems/ express couriers

Although not as prominent as maritime transport, there has been an increase in small parcel trade of pesticides. This is also evidenced in a recent survey conducted by the Universal Postal Union and TRACIT with postal authorities across 115 countries, where several postal operators reported instances of illicit pesticides in their supply chains. This was more common in the Asia Pacific region, where postal authorities from the region stated that illicit pesticides were often transported via postal channels.

Recently, in the Eastern Europe, South Caucasus and Central Asia region there has been an increase in counterfeit pesticides traded in small packages (for the use in gardens and small households), which are made to look as if they were legally manufactured in these states. These products are predominantly smuggled, and often have no registration.[26]

Case study: The silent mail route: pesticide smuggling tactics through postal channels in Brazil[27]

In Brazil, a multi-agency law enforcement operation named "Webcide" found that pesticides were sold and delivered through post offices - a prohibited practice - to any citizen with access to the websites. In order to circumvent the inspections and transport prohibitions, the traffickers did not issue invoices or falsified them. They also declared the illegal pesticides as detergent for vehicles and fertilizers for orchids in addition to providing fake declarations about value and amounts.

Moreover, the websites included guidance and recommendations given by unqualified people for the use of pesticides. In advertising the illegal pesticides on the web, the mandatory symbol consisting of a white circle containing a skull and two crossed shinbones, was removed or hidden. All of this exposed unaware purchasers to severe health risk and created severe risks for the environment.

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

There are a variety of market and strategic incentives for organized criminal groups and networks to produce and distribute illicit pesticides.[28] The size of the trade combined with minimal sanctions and limited regulatory oversight and enforcement regimes makes illicit pesticides a profitable crime.

EUROPOL reports that "the trade in illegal and counterfeit pesticides is organized by highly sophisticated criminal networks [and that] criminals have developed complex global supply chains and exploit legal companies to camouflage their activities. The global revenues associated with this crime are estimated to be billions of euros a year."[29]

Typical offenders range from loosely organized groups – sometimes just a few individuals – to highly organized criminal networks. There is growing evidence that sophisticated counterfeits are produced and distributed by large OCGs, which undertake the majority of illegal trans-border shipments.[30] The links between illicit trade in pesticides and organized crime appear to be significant as legitimate companies report having observed sophisticated criminal operations in the cases that they investigate. Companies have also noticed regional/country variations and patterns in the way organized criminal groups conduct illicit trade of pesticide products.

Recognizing the expansion of illicit pesticide markets and related involvement of serious organized criminal groups, the European Council had identified "counterfeit goods, violating health safety and food regulations and substandard goods" as a key organized crime priority.[31]

Case study: Pesticides and profits

As a result of Open-Source Intelligence (OSINT) gathering and market monitoring starting back in 2019, the Sygenta Corporate Security team identified a company named Pacific Chemical Industrial Co. (PCI) advertising packs and products with names of Syngenta products. Further research revealed that PCI was offering its products on multiple trade platforms in Russia at prices that were 15-50% below Recommended Retail Prices (RRP) in Russia.

Also, behind PCI was a company called Shijiazhuang Ageruo-Biotech Co. Ltd. (Ageruo). This name was also used as an alternate trading name for the company's activities in Russia and other countries. Syngenta's investigators found that the sales representatives of Ageruo had participated in trade exhibitions in Russia and Turkey where they offered their products, over 45 different brands, infringing Syngenta's IP rights.

Using covert tactics, the investigators contacted the Russian company to enquire about making a purchase of products they had on offer and spoke with one of their representatives called Sergey. While he did not disclose the names of the clients he worked for, he stated that they had a warehouse in Samara (Russia) where they could quickly ship products to customers. Although Sergey said that his company only dealt with large wholesale orders of several tons per product, Syngenta's investigators persuaded him to sell some samples of the chemical in question in low quantities. Unfortunately, due to the pandemic, the case could not progress in Russia at that time.

In order to further the investigation, Syngenta's team contacted their colleagues in China. The CN-CS team, a member of the Alibaba Anti-Counterfeiting Alliance (AACA), obtained additional intelligence on Ageruo operations. Evidence that Ageruo's activities were impacting Syngenta and competitors were found whilst posing as a customer in one of their stores. Contacts were then made with FMC, Bayer, and BASF to share information and organize the support needed for further research. The infringers' production facilities, warehouses, trading companies and suppliers in China were identified, and the findings of the investigation were relayed to Shanghai's Police for action to be taken.

The raids that took place targeted two trading companies, three tollers, two package producers, and three warehouses in Shanghai, Hebei, and Xinjiang provinces. It involved more than 230 police officers in one of the most significant operations against exporters of illicit crop protection products from China.

While the final figures still have to be released by the authorities, the total seizure tonnage estimated could be as much as 50 tons of illicit products and more than 36,000 copied bottles and 62,000 copied labels.

Behind this illegal scheme was a well-organized criminal group that had the moulds, labels, and other assorted components to mass-produce bottles for crop protection products imitating those of all major producers. The Chinese authorities have recently created a new department of the police in charge of IPR crime detection, focusing on food, drug, and environmental crime, which was instrumental to the success of this operation and the seizures made.

3.2 Corruption

Attractive profit margins in the illicit pesticides trade contribute to conspiracy and corruption of otherwise responsible law enforcement authorities including customs, inspectors and regulators. For example, in 2015, investigations in Punjab (India) into the role of illicit pesticides during the "whitefly" devastation of cotton crops resulted in arrests and charges of cheating, criminal breach of trust and criminal conspiracy against several prominent agricultural officials. Serious irregularities in the purchase of subsidized pesticides for distribution to farmers were reported, and large sums of money were seized from the home of the Agriculture Director, who allegedly overcharged the government for subsidized pesticides and allegedly accepted bribes to renew contracts for product licensing without proper tendering for bids.[32]

Case study: Seized illicit pesticides go missing from Polish warehouses

Interviewed sources for this study referred to reports by Polish authorities whereby seized illicit pesticides were missing from warehouses. It was suspected that consignees bribed lower-level officers for possession of the seized goods. Reportedly, in another instance, Polish customs received threats from the owners of seized goods for those goods to be released from the warehouses.

3.3 Forced Labor

The actors involved in illegal supply chains for pesticides have been known to disregard labor and human rights. Interviewed companies cited several recent cases of links between illicit trade in pesticides and labor violations. For example, in April 2021, NAS – "Nuclei Antisofisticazioni", a special unit of Italy's Carabinieri in charge of policing frauds in food supply chains, arrested 7 people on charges of criminal association and exploitation of non-EU citizens in the agricultural industry, forcing them to use unauthorized pesticides for greenhouse cultivation. Around 224 liters of unauthorized plant protection products were seized from 157 workers. Foreign citizens were subjected to conditions of exploitation and forced to work in hazardous conditions without protective equipment. In another instance from Italy, NAS reported the seizure of 200 liters of irregular pesticide products arriving from China. On site, workers were forced to work under cover at night to conceal the application of illegal pesticides to agricultural land. They were also subjected to grueling work hours during harvest periods and low wages.

In another example, in 2021, Turkish authorities raided and seized counterfeit pesticides worth 20 million Turkish Lira. During the raid, investigators also identified refugees from Afghanistan that were being exploited by criminals for manufacturing the illicit pesticides.[33]

Few workers have the courage to speak out against the working conditions and the absence of any job protection, as whoever reports may be threatened, beaten, or even killed.

Illegal pesticides are both produced and used by forced laborers. In both instances, workers' health and well-being are at serious risk from the forced handling of toxic chemicals, especially in poorly ventilated spaces.

Case study: Breaking the chains: forced labor in illicit pesticides trade in Italy

In November 2019, the Sikh agricultural workforce in Agro Pontino in the Lazio region of Italy protested against unacceptable working conditions, meagre wages and grueling work hours during harvest periods. There were reports where laborers recruited by gang members along the Pontine roads got paid lesser wages than they had worked for. Some workers were also subject to sexual abuse.

Due to the toxic nature of these illegal pesticides, there were reports of illness and abuse suffered by those who dared to report the illness. There were also reports of breathing issues. Most of these forced laborers were provided with no protective equipment.

Marco Omizzolo, researcher and sociologist with the Research Institute of Italians (Eurispes), was quoted saying:

"Certain doctors kept telling me about serious pathologies, even cancerous ones, skin problems, problems with the respiratory system, irritation spread throughout the body, always on the bodies of the workers, men and sometimes even women. We have found a combination that we define as perverse and dramatic, between labour exploitation, mafias, agromafias, and a question of health - public and environmental health. […] They are completely clandestine, completely illegal, and are then spread, used by labourers, sometimes even at night, without any kind of protection, to be able to increase agricultural production. The consequences are dramatic. We know that the basic chemical elements are purchased on the Chinese market, are brought to Italy even passing through the ports of Gioia Tauro and Naples, are processed in clandestine laboratories probably in the hands of the Camorra and then sold to certain bosses, agricultural producers in the province of Latina, but also, we know, in Sicily. There are companies that have, we suspect, direct relationships with

of Latina, but also, we know, in Sicily. There are companies that have, we suspect, direct relationships with large mafia organisations. Eurispes claims that the turnover of agromafias is as high as around 25 billion euros every year, in agriculture alone. Our latest financial package is 30 billion euros, the agromafias make 25 billion euros every year. This is to give some idea of the business that is above and below this system."[34]

The "Istituto Nazionale dei Tumori San Gallicano Regina Elena" in Rome carried out a study on the consequences of illegal pesticides on the health of farm workers and found cutaneous lymphoma on the skin of greenhouse laborers from toxicity of illicit pesticides. The report also found long term damage due to absorption of these substances in the lungs, mucous membranes and blood, and the risk of tumors.[35]

4. Impact on the UN Sustainable Development Goals

Illicit pesticides have adverse impacts on the achievement of the Sustainable Development Goals (SDGs) as they are untested for safety and may contain unapproved and unknown impurities, uncertified chemicals, illegal formulations or incorrect proportions of active ingredients, and generally do not adhere to the standards required of these chemicals. In particular:

- **SDG 1.** No poverty. According to some studies, high agricultural productivity decreases poverty by including higher incomes and associated multiplier effects that stimulate employment in the rural and urban non-farm sectors.[36] Since illicit pesticides adversely impact agricultural productivity through poor quality, they are detrimental to the reduction of poverty, employment and productivity in a country.
- **SDG 2.** Zero hunger. Illicit pesticides jeopardize crop yields and the production of safe, stable and nutritious food supplies. Further it limits agricultural productivity for local consumption or export, keeping people undernourished and lacking food security.
- **SDG 3.** Good health and well-being. Due to the poor quality of illicit pesticides, they pose significant risks to human health via direct exposure to unsafe chemicals, food toxicity, and safety hazards associated with transportation and handling.
- **SDG 6.** Clean water and sanitation. All illicit pesticides have chemicals that may potentially harm the water bodies, which explains the regulations in place for pesticide handling and discharge. Water quality is compromised through run offs, adversely affecting the protection of water-related ecosystems from contamination.
- **SDG 8.** Decent work and economic growth. There are a number of negative economic impacts extending from the growth in illicit pesticides, starting with lost government revenues from uncollected taxes. This illicit activity exacerbates budget deficits and precludes government from spending on health care, infrastructure and job creation.[37] Illicit pesticides also drain farmer profitability through spending on ineffective pesticides, causing reductions in crop yields and knock-on effects on GDP, jobs and tax revenues.

- **SDG 12.** Responsible consumption and production. Illicit pesticides prevent environmentally sound, life-cycle management of chemicals and wastes.
- **SDG 14.** Life below water. Illicit pesticides exacerbate prevention of harmful run-off and releases of toxic chemicals to water bodies, thereby harming life below water.
- **SDG 15.** Life on land. Illicit pesticides render agricultural land infertile due to soil degradation, increase pest resistance and contaminated ground water, adversely affecting land ecosystems.
- **SDG 16.** Peace, justice and strong institutions. Illicit pesticides undermine governments' capacity to enforce policy, promote the rule of law, eradicate corruption and combat other forms of criminal activity.

5. Institutional framework

This section features a selection of some of the most relevant and innovative initiatives to address illicit trade in pesticides implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

United Nations Interregional Crime and Justice Research Institute (UNICRI)

In 2016, UNICRI developed a framework aimed at enhancing an international strategy to counter serious and organized groups involved in crimes having an adverse impact on the environment, including trafficking of illicit pesticides.[38] UNICRI is dedicated to improving awareness and development of institutional capacities for enhanced cooperation and enforcement on illicit pesticides and organized crime through four primary mechanisms:

1. Data collection to support gap analysis and threat assessments;
2. Capacity building for law enforcement, prosecution, and judicial authorities;
3. National cooperation and coordination; and
4. International cooperation.[39]

United Nations Food and Agriculture Organization (FAO)

International Code of Conduct on Pesticide Management

The Code of Conduct is a voluntary framework endorsed by the FAO members and supported by key pesticide industry associations and civil society organizations. It complements legally binding instruments such as the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade, the Stockholm Convention on Persistent Organic Pollutants and the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.

The Code of Conduct incorporates the principles of Integrated Pest Management, the Integrated Vector Management and risk management, as well as chemical, safety and health professional standards and best practices.[40]

Organization for Economic Co-operation and Development (OECD)

Recommendation on Countering the Illegal Trade of Pesticides

Adopted by the OECD Council on 20 February 2019, it encourages adherents to establish or strengthen national procedures aimed at countering the illegal trade of agricultural pesticides in line with the Best Practice Guidance to identify Illegal Trade of Pesticides, and taking into account national priorities, policies and programs.[41]

Best Practice Guidance to identify Illegal Trade of Pesticides

The Guidance provides advise for inspectors and regulatory authorities on identifying and tackling illegal pesticides throughout the complete lifecycle of a pesticide. Featured best practices are organized under the following headings: manufacture, formulation, import, export, transportation, use, sale/retail, and disposal of legal pesticides.[42]

United Nations Environment Programme (UNEP)

Under the guidance of UNEP, countries formulated three international treaties relevant to tackling illicit pesticides:

- Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal (1989);
- Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade (1998);
- Stockholm Convention on Persistent Organic Pollutants (POPs) (2001).

Taken together, the three treaties cover key elements of "cradle-to-grave" management of hazardous chemicals, most comprehensively in the case of POPs, which are covered by all three instruments. While their focus is on the treatment and movement of hazardous wastes from an environmental perspective, their scope also includes the illicit trade of chemicals.

European Union

A study conducted in the EU region has formulated a series of recommendations both of legislative and non-legislative nature. Amongst the 17 recommendations, the following stand out as particularly relevant:

- Furthering harmonization by adopting implementing rules for official controls on plant protection products (PPPs) to be performed on the market as well as at EU entry points.
- Increasing legal certainty by clarifying key definitions in PPPs-related legislation.
- Bridging legislative gaps, namely by establishing an EU database for PPPs authorization.
- Evaluating complexity by reviewing EU provisions on parallel trade in the context of the planned review of the EU legal framework for PPPs authorization.
- Enhancing awareness by disseminating knowledge and building capacity via relevant EU and national training.
- Building international cooperation, by developing long-term cooperation with those non-EU countries that are most frequently pointed out as a source of illegal PPPs.
- Ensuring intermediaries conduct proper due diligence.[43]

Case Study: Operation "Silver Axe"[44]

Operation Silver Axe is an annual operation coordinated by Europol's Intellectual Property Crime Coordinated Coalition (IPC3) with the support of the European Anti-Fraud Office (OLAF). The first edition took place in 2015 and resulted in 190 tonnes of pesticides being seized. In 2017, Silver Axe II resulted in 122 tonnes being seized.

The third edition saw 360 tonnes being seized, enough to spray 48,000 square kilometers of land. Most of the pesticides detected originated from China and India. In many cases, the shipments were declared as being in transit in the EU or declared for export from the EU to third countries, such as Moldova, Russia, Turkey and Ukraine. Other identified source countries for counterfeit pesticides were North Macedonia and Serbia. The operation highlighted the modus operandi of the involved OCGs, which placed false brand labels on their goods or labels in non-EU languages. The goods were subsequently imported by relying on fraudulent transport documents or were smuggled across the EU's external borders. Another common method was to import in bulk with fraudulent declarations, and subsequently pack and label the products in the EU. In other cases, trademark-bearing goods, such as bottles or bottle caps, were sent separately from the chemicals.

The most recent one in 2021 saw a sharp increase in seizures and involved joint action from law enforcement in 35 countries (all 27 EU Member States and 8 third party countries). They seized illicit pesticides worth up to EUR 80 million in criminal profits amounting to 1,203 tonnes being taken of the market. During the operation, law enforcement authorities targeted the sale of counterfeits, banned products and unregulated imports – both online and offline. They carried out inspections on land and sea borders, inland marketplaces, parcel service providers and online marketplaces.

5.2 Select national responses

United States' Joint Strategic Plan for Intellectual Property Enforcement (2017-2019)[45]

Under this Plan, specific concerns were raised about the growing problem of illicit pesticide. One suggested action item was to develop training modules for IP enforcement professionals on options for the safe storage and disposal of seized counterfeit goods, with particular emphasis on pesticides, electronics, pharmaceuticals, and illegal drugs. The Department of Homeland Security (DHS) envisaged consultations with the International Trade Administration and Department of State to identify opportunities to share this training with international partners. While this plan has been superseded by the Joint Strategic Plan 2020 – 2023, the new plan does not specifically address the problem of illicit pesticides but states that it continues to carry out the strategies and work envisaged under the previous plan.

Brazil's legislation on pesticides[46]

Brazilian law provides guidelines and sanctions for anyone who violates the regulations on the production, sale, transport, application, service, disposal and packaging of pesticides and related products. One of the key provisions is article 15, which states: "Anyone who produces, sells, transports, applies, provides services, disposes of waste and empty packaging of pesticides, their components and the like, in non-compliance with the requirements established in the relevant legislation will be subject to a prison sentence of two to four years, in addition to a fine."

The Netherlands' Food and Consumer Product Safety Authority (NVWA)[47]

As the authority responsible for enforcing regulations related to pesticides, NVWA works closely with customs, the police, and the public prosecution service to prevent non-authorized and counterfeit pesticides from reaching the market. Activities that seek to control pesticides mainly target the port of Rotterdam and Schiphol airport. NVWA is in charge of defining and updating risk profiles and entering indicators into the customs automated risk management system (ARMS), which can automatically assess the risks associated with a specific shipment and recommend the appropriate level of control and inspection procedure. Indicators of risks encompass the presence of an active ingredient, the use of a description for the goods or the names of importing companies that are known to use illegal pesticides. Shipments that are selected by the ARMS are inspected by both customs officers and the NVWA. Customs are responsible for coordinating these combined inspections and ensuring that only one physical check is carried out, thus minimizing the loss of time in the logistics chain. The NVWA then communicates the outcome of its inspection to customs in order to ensure that a shipment is not released. Besides reducing time and costs for traders, the "one check principle" enables the different agencies responsible for the control of illegal pesticides to benefit from each other's knowledge and expertise. The NVWA also offers training to customs officials when required.

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures taken by businesses

The following summarize actions that businesses involved in the crop protection industry are taking to mitigate the risk and consequences of illicit trade:

- Elaborating codes of conduct / guidelines for doing business, which also require adherence by third parties, including suppliers. As part of their corporate security strategy, companies implement strict compliance, anti-corruption, anti-bribery and transparency rules.[48] Companies are also including anti-counterfeiting clauses in their contracts, so as to bring attention and awareness to the issue.
- Conducting investigations, either on their own initiative or in liaison with regulatory authorities, in territories or regions where there is a market for illegal products of their brands.
- Exercising pressure on public/legislative authorities to increase penalty levels for conduct related to illicit trade in pesticides.
- In light of the key role played by the transport industry, cooperating on a cross-industry basis with leading shipping and logistics companies to disrupt the transport chain for counterfeit and other illicit products.
- Online marketplace monitoring, e.g. collaborating with multiple e-commerce platforms to detect and takedown illicitly traded goods.

- To tackle the problem of online sales, industry has sought support from regulatory authorities. For example, CropLife International works with regulators in Asia to ensure that platforms are reminded of their obligations vis-à-vis online sellers, especially by requiring that they request sellers to provide pesticide registration certificates. Overall, companies aim to achieve a situation whereby platforms will start to apply due diligence policies more forcefully through increased pressure and awareness raising by regulatory authorities.
- Working on innovative product design, packaging and labeling measures to counter illegal activities. For example, Bayer uses the CapSeal technology on all its crop protection products that are filled in bottles and sold in the Europe, Middle East, Africa and Latin America regions, as well as parts of Asia/Pacific. The closure seal has optical security features and a QR code that users can scan with an interactive smartphone app to receive important information about the product's authenticity.
- Developing best practices through the supply chain. New policy proposals are intended to allow better management of the whole supply chain - manufacture, customs, exporter/importer, and suppliers/distributors. For example, Bayer has developed an Anti-Counterfeit strategy based on initiatives and pro-active measures across the entire supply chain – from production via transport up to the distribution, sale and final use of the crop protection products and seeds. In one such effort, Bayer has been cooperating with the Chinese customs authorities to identify counterfeit products and intercept them at the point of export from China.
- Carrying out stakeholder awareness exercises (e.g., targeting farmers, retailers, policy makers) on the threat posed by illicit pesticides. At the European level, industry is working to broaden awareness across a wide audience. Interviewed sources reported that in Poland the pesticides industry has communicated with farmers on the presence of illegal pesticides for years, disseminating the outcome of market research showing that only 50% of the products were legitimate. Conducting awareness raising campaigns with farmers and distributors -as well as working with farmers on the use of social media to send anti- counterfeiting messaging to their peers - has had a very positive effect in terms of farmers realizing the extent of the problem.

Case study: Bridging gaps: the power of partnerships in Brebes, Indonesia

In a successful example of public-private partnerships in combatting illicit pesticides, Brebes Regency of Central Java and CropLife Indonesia (through the Department of Agriculture and Food Security) have agreed to combine efforts to carry out more strategic activities in: i) minimizing and limiting the movement of counterfeiters in circulating fake pesticides in the Brebes area; ii) introducing sustainable agricultural practices through the use of technological solutions. CropLife Indonesia liaises with the government to conduct talks as well provide technology training for authorities on crop protection.[49]

6.2 Business driven technological solutions

Technology plays a central role in enhancing the capabilities necessary to generate accurate, timely, and actionable information about illicit pesticides, as well as in authenticating and distinguishing between registered and illicit pesticides. Over the past few years, new value chain and data management technologies have been gaining recognition for their potential to improve traceability in agro-food supply chains. These new technologies seem to be particularly relevant in the context of complex value chains that create opportunities for fraud and illegal practices.[50]

In 2020, the OECD released a paper, "New Digital Technologies to Tackle Trade in Illegal Pesticides." The paper notably outlines the potential and challenges of adopting digital-based policy responses. The OECD notes two policy areas that could benefit from the support of new digital technologies: i) the traceability and authentication system for pesticide products (blockchain); and ii) the monitoring and control of pesticide trade, mainly at custom borders (big data analytics and artificial intelligence (AI)).[51]

Some notable technological initiatives of the private sector include:

- **IBM Food Trust.** A blockchain tracking system to promote safer and smarter food supply chains. The initiative connects participants across the food supply chain (i.e. producers, suppliers, manufacturers, retailers, and consumers) through a permanent and shared record of transaction and food system data, significantly reducing opportunities for fraud. Walmart and Carrefour have adopted this technology to provide consumers with greater trust in their products and to differentiate their brands from their competitors.[52]
- **OECD Seed Scheme.** It is currently exploring how blockchain technology can improve the security of the existing paper-based seed lot identification and traceability system in place in OECD countries.[53]
- **CapSeal.** Developed by Bayer Lifesciences, it has a closure seal with optical security features and a QR code that farmers can scan with an interactive app to receive important information about the product's authenticity. CapSeal is currently featured on the packaging of all Bayer crop protection products that are filled in bottles and sold in the Europe, Middle East, Africa and Latin America regions, as well as parts of Asia/Pacific.

7. Recommendations

The following are focused recommendations to help combat illicit trade in pesticides by government and private entities.

- **Increased transparency and traceability in shipping (export/import) documents and supply chain:** Shipping documents need to be verified to ensure that they are available to both regulators and customs to evaluate whether pesticides are legal and registered in the country where they are manufactured and in the country of intended use.[54] There is also a need for stricter export regulations in producing countries. Product labels/containers and corresponding shipping documents should be more explicit about their content, origin and destination. The quality of shipping documents should be improved, and easy access should be made possible to both regulators and customs. All links in the chain (sellers, buyers and transporters) should know who their suppliers and customers are.[55]

- **Better compliance and enforcement tools and better risk analysis:** Unauthorized pesticide importing, counterfeiting and associated activities are relatively low-risk criminal ventures with generally minor legal, financial, or criminal consequences. As a criminal enterprise, there is little threat to the profitability of activities involving illegal pesticides. Moreover, offenders are unlikely to be apprehended as authorities are under-resourced and the penal system does not usually create a significant deterrent. Penalties vary markedly by country, and in some jurisdictions, products deemed not harmful to human health may be allowed to be returned to the supplier or country of origin. More controls and enforcement actions are necessary, such as developing more compliance tools, improving monitoring and inspections/controls along the whole supply chain and applying stronger administrative and financial sanctions. Risk analysis is recognized as an important tool to better target potential illegal trade in pesticides.[56]
- **Training, awareness raising, communication:** Educational materials, manuals, brochures, guidance documents or e-learning programs are key to raising awareness of the issue.[57] Some countries have already invested time and effort into training and education initiatives targeting importers, distributors or farmers, about the consequences of using illegal pesticides, and have observed positive outcomes.
- **Destruction of illegal products:** There are no standard procedures across countries to destroy and dispose of illicit pesticides and machinery used manufacture them. Some countries send shipments back to the manufacturers and exporters as they do not have the capacity to dispose the same in an environmentally sound manner. This provides opportunities for criminals to reinsert the illicit pesticides back into legitimate supply chains. There are other cases where illicit pesticides stored in warehouses are illegally removed and enter markets. Customs need to engage with specialized agencies that can transport the illicit goods into their premises for safe dismantling, secure cost-effective storage and immediate destruction for confirmed illicit goods while mitigating the impact on the environment. Further to act as deterrence for criminals trading in illicit pesticides, they should be primarily held liable for storage and destruction costs of these goods. Whenever the identity of the infringer is unknown or the infringer refuses to pay such costs, liability should be transferred to the economic operators involved. This will also promote stronger due diligence by intermediaries. Furthermore, methods to safely store, dispose, and destroy illicit pesticides must be included in enforcement training programs. This will assist in developing robust organizational frameworks as well as provide the required technical knowledge.
- **Regulation of online platforms:** Existing laws that regulate pesticides are not being applied to e-commerce. The law of 'registration in country of use' is being ignored through online sales, allowing many sellers to trade without proper registration certificates. Countries should thus adopt regulatory frameworks ensuring that online platforms are held responsible for checking pesticide sellers' credentials, which includes verifying that pesticide vendors have a "license" to sell pesticides. Moreover, when it comes to reducing the abuse of online platforms for illicit trade purposes, there is a need to engage platforms more forcefully in the implementation of "know-your-customer" (KYC) policies. It is critical to implement controls/prohibitions on online sellers that repeatedly violate specific laws and impose penalties if they knowingly (or negligently)

engage in this type of trade. Furthermore, distinguishing genuine from illicit products is particularly challenging online. In recognition of this, for example, Bayer Crop Science cooperates with the operators of major online marketplaces to jointly develop steps to prevent the sale of counterfeit or illegal products.[58]

- **Technological solutions that can support regulatory and/or enforcement efforts:** The systematic and continuous use of procedures, technology and auditing are necessary to identify high-risk shipments for potential illicit pesticides and contaminants at the earliest stages in the pesticide lifecycle, and to rapidly trace the production source. A number of technologies may be used to authenticate products, including packaging techniques such as holograms, barcodes, and radio frequency chips. Immunoassay and chemical tests may also be used to detect active ingredient concentrations and contaminants. Historically, these types of tests have been expensive, although technological advances and market demand are beginning to make them more affordable and accessible. Some authentication measures can facilitate visibility and serve functional traceability purposes within the supply chain.[59] At the same time, while technological solutions appear to be a preferred choice amongst private sector actors and have significant potential to uphold the integrity of supply chains for pesticides, they may not necessarily help in poor countries' rural areas, where the supporting infrastructure is still underdeveloped. Instead, a combination of traditional checking systems and technology would help. For e.g. in a country like Nigeria, where there are currently no known mechanisms in place to address the illicit trade of pesticides, traditional checks would be an appropriate place to start.
- **International and regional cooperation:** Crop protection companies, governments and national trade organizations should continue working together to ramp up regulations, improve policies and create stricter, more explicit guidelines to combat illegal pesticide trade.[60] Although some information networks already exist in some regions (e.g. in the EU), stronger cooperation mechanisms with foreign authorities, between exporting and importing countries and between customs and regulatory authorities, should be encouraged.[61]

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III. ALCOHOL

1. Overview and findings

Illicit alcohol and trade dynamics

What is illicit alcohol?[1]

Illicit trade in alcohol can take various forms and affect multiple nodes in the supply chain. It manifests itself as follows:

Contraband/Smuggled Alcohol. Alcohol with original branding that has been illegally imported into a jurisdiction evading tariffs/customs duties. This includes beverages brought across borders via organized smuggling or in excess of the applicable traveler's regulated allowance.

Counterfeit Alcohol / Bootlegging. Fraudulent imitations of legitimate branded products, including refilling, falsification and tampering. These beverages infringe the intellectual property rights of legitimate producers and expose brands to reputational risks and potential liability issues. They are often produced in clandestine factories, sometimes using lower grade alcohol not intended for human consumption such as denatured ethyl alcohol.

Illicit Artisanal Alcohol. Beverages produced following artisanal practices, including home production. These products are considered illicit if they are produced for commercial purposes, and if their production and/or sale violate local laws.

Tax Leakage. Legally produced alcohol beverages on which the required excise tax has not been paid in the jurisdiction of production.

Non-conforming Alcohol / Surrogate. Products that are not compliant with production processes, guidelines or labeling legislation. It includes beverages produced with denatured alcohol or illegal industrial alcohol not produced for human consumption.

A wide range of actors may take part in these illicit activities at different nodes of the supply chain. For instance, certain retailers commercialize part of their genuine alcohol stocks through non-registered channels to avoid paying taxes and/or commingle legitimately imported/produced products with illicit ones. In some cases, wholesalers and distributors divert genuine products from the legitimate supply chain to unregulated markets, which are frequently controlled by violent organized criminal groups, etc. As a result, it is often complex to identify the supply chain modalities that illicit traders use to commercialize illegal alcohol.

Moreover, the global illicit alcohol market is diverse in terms of shape, size and form. A Euromonitor study carried out in 2018 and covering 24 Latin American, African and Eastern European countries found that some alcoholic beverages are more subject to illicit trade than others. For instance, beer made up 52.9% of total recorded consumption of alcoholic beverages (in terms of alcohol equivalents). However, it constituted just about 10% of the total illegal trade, indicating that illicit beer comprised a mere 2.3% of the total

alcohol consumption. The report highlighted that the major issue with illicit trade primarily centered around higher-value distilled spirits, which contributed to 81% of illicit alcohol trade. Wine and other products, making up approximately 9%, accounted for the remaining portion.[2]

2. *Modus operandi*

2.1 Supply chain modalities

Depending on the drivers and constraints of specific illicit market (e.g., consumers' preferences, availability of products, social acceptability, price gap between licit and illicit beverages, quality and degree of law enforcement), different regions in the world display different illicit alcohol dynamics. For instance, illicit trade in alcoholic beverages in several Middle Eastern and Latin American countries is mostly driven by smuggling and counterfeit of premium brands; the Western African region is particularly affected by illicit artisanal beverages; and Eastern European countries suffer considerably from tax leakage activity and counterfeit brands. And yet, despite the specificities observed in each region, all forms of illicit trade in alcohol appear to be present in all regions of the world, only at different magnitudes.[3]

True to form, similar contexts in distant countries often generate similar illegal practices and affect the same nodes in the supply chain. For example, as shown by the case study below the modus operandi to illegally distribute alcohol in two faraway countries that temporarily prohibited the consumption of alcohol presents important analogies.

Case study: "Creative" illegal distribution systems in India and Panama following alcohol prohibition laws

In 2019, a raid in Bihar (an Indian state enforcing a prohibition on alcohol consumption) seized an ambulance that was transporting 33 cartons of foreign liquor.[4] Other ways in which alcohol smuggling has been recorded in Bihar are through cycle tubes strapped on to a man, bunker inside of a temple, storing them in tubes of vehicles with big tires, etc.[5]

During the COVID-19 lock-down in Panama, the government implemented "dry laws" prohibiting the commercialization of alcoholic beverages. Interviewed companies and police officers reported that local retailers distributed alcoholic beverages in non-official posts, such as at crossroads and parking lots. During transportation, the products were concealed in hidden compartments in cars and trucks.[6]

The comparison of data collected in different countries and regions led to the identification of similar supply chain disruption patterns vis-à-vis the illicit trade drivers. For instance, in Eastern Europe and Latin America, companies have reported a spike in the consumption and popularity of imported premium spirits, such as Scottish whisky and gin.[7] This phenomenon is commonly known as "premiumization" and is mainly driven by consumers' preference. In a nutshell, specific products and/or brands that have become particularly appealing for consumers are frequently targeted by illicit traders, especially in countries where the excise tax is high. Both in Eastern Europe and Latin America, premium genuine products are usually trafficked by individuals in cars and trucks from jurisdictions where excise is considerably lower.

Spirits and wine, in particular, are popular targets for counterfeiting by organized criminal groups. A common modus operandi to counterfeit wine involves placing cheap wine in bottles containing fake labels of expensive wine brands. In some cases, pure alcohol is added to low-quality wine to increase the alcohol percentage. Counterfeiters either reuse original bottles or print/import counterfeit labels and/or caps to place on empty bottles. In recent years, several sophisticated EU-based organized criminal groups, consisting of individuals with specific tasks related to production and distribution of the wine, have been disrupted.[8]

On many occasions, the distribution of contraband alcohol occurs through unauthorized channels, as consumers are aware of the illegal source of the genuine products and intentionally seek this cheaper option. Conversely, tampered alcoholic beverages are frequently sold through official distribution outlets, such as bars, clubs and restaurants. Many bootleggers typically package and sell their products in emptied bottles of cheap alcohol and pass them off as authentic and safely processed liquors to distributors.[9] In this regard, companies have reported that the high quality of counterfeits has recently increased, making it very difficult to detect and deter tampered products, such as refilled and/or watered-down bottles. As such, contraband/smuggled products are normally diverted from the legitimate supply chain and commercialized under the table, whereas tampered/counterfeit beverages are frequently inserted at the last node of the supply chain.

Concerning tax leakage, companies have reported that this practice is mostly spread in Eastern Europe. A common practice consists of mislabeling high-alcoholic beverages in order to avoid higher excise taxes. Often, product mislabeling takes place in small legal factories during "third shifts", i.e., during times where the factories are not officially operating, for instance, at night. The beverages are either distributed through official supply chains or nonregistered segments of the distribution system, such as retailers without authorization/license to commercialize alcoholic beverages. When the operation takes place through legitimate distribution channels, consumers are normally not aware of the beverages' irregular origin.

Artisanal non-regulated production of alcohol mostly takes place in rural areas, where traditional beverages are commercialized. Interviewed companies reported that this type of product tends to benefit from high degrees of social acceptability due to their being part of local cultures. In addition, public authorities often tolerate this practice. However, if the artisanal production of beverages is systematically commercialized instead of being self-consumed, it constitutes plain illicit trade in alcohol. The supply of artisanal beverages is mostly done through parallel/nonregulated small-scale channels, such as informal posts in street intersections.

The illegal commercialization of surrogate alcohol is mostly related to the diversion and use of pharmaceutical alcohol for consumption purposes. In several jurisdictions, alcohol not suitable for human consumption is sold over the counter, thus the precursors are easily obtained by illegal producers. In countries where the commercialization of pharmaceutical alcohol is regulated, perpetrators find ways to evade the system, e.g., through corruption, misdeclarations, etc. Given the low quality of surrogate alcohol, the distribution channels of these products is mostly non-official/non-regulated.

In relation to all manifestations of illicit trade in alcohol, interviewed companies reported that official wholesalers in Latin American, Eastern European and Asia countries frequently conceal illegal products (mostly contraband) in their warehouses. By this token, if they are confronted with an inspection, the wholesalers seek to dispel any suspicion about their illegal activities by covering themselves under their status as official distributors. For instance, in Dubai, some bootleggers misuse warehouse permits to illegally store alcohol.[10]

Overall, in terms of illegal supply chain modalities, interviewed sources have observed that:

- Genuine and counterfeit products are often distributed through the same channels. However, on many occasions smuggled products are sold under the table, whereas counterfeit/tampered products are sold in official on-trade outlets to unaware consumers.
- The quality of the product may determine the supply chain modality. Surrogate and/or low-quality counterfeits are mostly distributed through parallel/non-official channels, as consumers in official outlets normally require higher standards.
- Given the complex schemes involved in distribution channels, it can be challenging to distinguish licit from illicit alcohol, particularly when distributors are simultaneously engaged in legal and illegal activities.

2.2 Transport Dynamics

The illegal transportation of alcoholic beverages may take different forms depending, *inter alia*, on the countries, actors and product involved. In most cases, transportation takes place via land routes. However, interviewed companies have also reported significant maritime activity, particularly in relation to FTZs (see section 6.2.2). Aerial transportation is insignificant, with some examples dating from the "dry law era" back in 1920s.[11]

Genuine products are essentially trafficked across borders, as smugglers benefit from the price gap between different jurisdictions. However, surrogate products, such as alcohol not intended for human consumption, are also frequently exported from jurisdictions with cheaper products and/or less stringent purchase regulations.

Interviewed companies have reported that the smuggling of alcohol into a country often involves a wide variety of illegal practices, most of which are aimed at bypassing border controls. Typically, alcohol smugglers have a good knowledge of transportation geography, based on which they decide their trading routes and whether or not to cross borders at official checkpoints.[12]

The most common modus operandi include:

- Using unofficial routes or border blind spots. This practice has been reported in countries with large and porous borders, such as Central American and Western African countries. Borders are often porous and are crossed by foot, by horse or all-terrain vehicles.[13]
- Concealing alcohol products inside luggage, voluminous products (e.g., mattresses) or secret compartments in vehicles.
- Offloading and reloading cargo and commingling it before and after border posts, depending on the intensity of the controls. This modus operandi often includes the misuse of warehouse permits in facilities located close to border controls.
- Duty evasion, under-declaration and mis-declaration of duties.
- Corruption of public officials to enable or overlook the transportation of illegal cargo.

Smugglers and bootleggers often benefit from lax or non-existent controls and checks in many border posts. For instance, interviewed companies reported that genuine premium products are illegally distributed in Caribbean countries via maritime transportation, which is barely subject to any control.

Companies have also observed an increase in transportation by maritime routes due to COVID-19, as land transportation was dramatically curtailed during the lockdowns, making this means of transportation less convenient. When controls are in place, vulnerabilities are normally exploited by incorrectly declaring goods, relying on under-resourced customs authorities that do not implement effective checks on consignments.

In relation to artisanal alcohol production, surrogate and counterfeit/tampered products, their transportation mostly takes place through precarious land routes.

Case study: Spirits in transit: the illicit alcohol trade across borders in the UAE, India, and Central America

Since 2010, **Dubai** and the United Arab Emirates (UAE) at large have seen a sharp rise in the illicit trade of alcohol, especially bootlegging activities. This trade appears to be largely controlled by individuals from Iran, India, Pakistan and, to some extent, Africa. Allegedly, Indian and Pakistani traffickers serve as foot soldiers, making deliveries at labor camps, hotels and even residences in the UAE. Alcohol is believed to be sourced from a Northern Emirate where even taxi drivers also allegedly play a part in the supply chain.[14]

In **Mumbai**, illicit liquor is carried in plastic balloons and moved around by means that have remained unchanged over the years. The usual transport mode is by the first train that comes to the station at about 5 a.m. The carriers occupy the luggage van along with the contraband, which is kept a short distance away. Law enforcement officers are usually offered bribes.[15]

In **Central America**, interviewed companies have reported that Guatemala and El Salvador have become centers for the diversion of smuggled products coming from Mexico and/or the Colon free trade zone. Most of the contraband is transported in trucks using unofficial roads to avoid border controls. However, traffickers have also been observed concealing the products in hidden compartments or simply bribe public officials to filtrate their illegal cargo without any control.[16]

2.3 Hotspots

2.3.1 Online

The online sales channels for alcoholic beverages are frequently used to facilitate illicit trade. Illicit traders benefit from the anonymity and minimum exposure that online activities provide. As most countries are not prioritizing the prevention of illegal commercialization of alcohol online, and the offer for sale is frequently published on private groups on social media, criminal networks can easily avoid controls and ship the products to online consumers. In addition, counterfeiters selling illicit alcohol online exploit the fact that consumers cannot inspect the physical products ahead of their purchasing decision. By using images of genuine products, counterfeiters are able to allure online costumers and more easily dupe them. Online channels are also widely used by counterfeiters to purchase dry goods required for the production of counterfeit products, such as labels and corks. Counterfeit excise stamps that are meant to prove tax payment/authenticity of the product can also be purchased online.

Prior to the COVID-19 pandemic, several online platforms and smart phone messaging applications were already used to commercialize illegal alcohol. During the 2020 and 2021 lockdowns related to the COVID-19 pandemic, several companies and law enforcement agencies reported a significant global increase in the use of digital platforms to commercialize unlicensed and unregulated alcohol.[17]

The sale of illegal alcohol online may include counterfeit, mislabeled or fraudulent products. Interviewees have reported a number of supply mechanisms related to online illicit trade in alcoholic beverages:

- In cities located close to countries' borders in Latin America, smugglers advertise a list of genuine products through Facebook/Instagram private messaging or even uploading the information on public posts. After receiving a request from an online customer, the smuggler purchases the products in a more convenient jurisdiction and brings it back through blind border spots or by bribing public officials. It is noteworthy that the products purchased abroad may be stolen products originating, for instance, from hijacked trucks.
- In Eastern European countries, illicit traders mostly promote their products in social media and carry out transactions via Telegram. As law enforcement agencies in countries such as Russia have intensified their actions to counter online illicit trade in alcoholic products, use of the Telegram messaging application has become popular. Unlike WhatsApp and Viber, Telegram does not necessarily require a phone number to set up an account, which explains why illicit traders use the application to remain anonymous.
- In all surveyed regions, the delivery of products ordered online is generally done directly to the customer's domicile or on agreed delivery spots, such as crossroads.

All interviewed companies mentioned consumers' increasing tendency to use online channels to purchase alcoholic beverages. For instance, online alcohol sales in the U.S. reached $1.7 billion in 2017, with grocery stores poised to become the main channels for the delivery of products bought online. Globally, it is estimated that alcohol sales will increase at an annual growth rate of 2 percent through 2025, driven in part by a greater demand for "premium/super premium products" – which, when it comes to alcohol, many consumers find easier to buy online than in local stores.[18]

In many countries, the commercialization of alcoholic beverages online is not the object of detailed regulation. For example, whereas some general requirements – such as bearing a license to commercialize alcohol - would be applicable, issues like publicizing products online would not be covered. At the same time, in countries with more stringent regulations, online channels continue to be used to facilitate illicit trade. For instance, in some U.S. states, there is a three-tiered distribution system for alcohol distribution, which protects consumers from buying tainted alcohol. The basic feature of this system is that producers are only allowed to sell their products to wholesale distributors who can then sell them to retailers, and only retailers may sell to consumers.[19] To comply with the requirements of the three-tiered distribution system, Facebook has banned the sale of alcohol between users and E-bay only allows alcohol sales by preapproved and licensed sellers. However, it has been alleged that these platforms, including Craigslist, would still be porous to the illegal commercialization of alcohol online.[20]

2.3.2 Free Trade Zones

In relation to illicit trade in alcoholic beverages, some of the most relevant vulnerabilities observed in FTZs include:

- The misuse of transshipment points in cargo routings through FTZs.
- Deceptive transshipment practices, mislabeling and fraudulent invoices. These allow illegal traders to bypass sanctions, trade tariffs and regulations by obfuscating the identity of the country of origin or the illicit nature of the goods.
- Weak oversight and lack of transparency/ clarity in the scope of regulations that cover customs controls in FTZs. In some cases, it is not clear if the government authorities have full jurisdiction to exercise those controls.
- Weak procedures to inspect cargo. Given the extremely high volumes of shipments processed in FTZs, one serious vulnerability is the inefficient (or absence of) cargo inspection.

Case study: From barrel to border: investigating excise tax evasion through FTZs

Interviewed sources mentioned that FTZs are frequently used to facilitate the contraband of premium spirits. According to a 2020 ICC BASCAP Report on FTZs, illicit alcohol and spirits is the third category of commonly identified illicit activities in FTZs, after counterfeits and illicit tobacco.[21]

For instance, in Central America premium brands of whiskey find their way into the region through the Colon FTZ in Panama and Corozal FTZ in Belize.[22] These are two key hubs from which smuggled alcoholic beverages are diverted, mostly via maritime transportation, into all countries in the Central American region, including Colombia. Interviewed companies reported that the products are frequently purchased legally in origin countries, hence their passage through FTZs is mostly aimed at evading excise.

2.3.3 Postal systems/ express couriers

Shipping alcoholic beverages can be legally complicated, particularly when it is done internationally. Express couriers, such as DHL and FEDEX, have detailed policies and regulations for shipping alcohol, which are aligned with the governing laws in origin and destination countries/states.[23] Nonetheless, when it is possible to ship alcoholic beverages, consumers' exposure to substandard products is greater, as shippers may exploit the lack of controls. Consequently, interviewed sources reported that counterfeiters use such platforms to deliver small quantities orders and counterfeit dry goods.

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

For the last century, most of the distribution and/or production of illicit alcoholic beverages has been controlled by organized criminal networks, including by notorious groups such as those acting in Chicago in the 1920s during the prohibition era. Even today, organized crime is heavily involved in the illegal commercialization of alcoholic beverages, affecting the supply chain at different levels and in many ways.

Given the strict requirements in place for the production and commercialization of alcoholic beverages worldwide, any significant illicit trade operation in these products requires a significant level of expertise, structure and organization. Illicit trade in alcohol thus normally entails the collusion of several individuals acting with a common purpose. Throughout the interviews realized for this study, it was possible to collect various examples of supply chain disruption activities involving organized criminal groups:

- In Latin America, organized criminal groups have been observed collecting empty bottles of genuine brands, which were later refilled with counterfeits and surrogate alcohol. These products were very often re-introduced in the official supply chain, including on-trade establishments, such as bars and restaurants, and, between 2020 and 2021, caused the death of several consumers.[24]
- In the same region, particularly in Guatemala, El Salvador and Honduras, many on-trade establishments are owned by organized criminal groups, who frequently sell counterfeits and contraband products. Violent criminal groups involved in these criminal schemes, such as the "Maras", frequently exercise control over territories in a country.
- Violent criminal groups controlling certain territories in Mexico frequently hijack entire convoys of trucks transporting legitimate products. As such, part of the tax leakage and contraband in alcoholic beverages that affect the country have their origin in this type of organized criminal activities. Interestingly, this situation has also been affected by the "premiumization" of products, which has extended to specific brands of beer. This is particularly striking, as the low price of this product normally would not encourage its trafficking. It appears that, to a large extent, the precedence of the beer derives from the robbery of land cargoes by organized crime.
- In Eastern European countries, the most significant manifestation of illicit trade is tax leakage. The tax loss and crime proceeds generated by this criminal activity are considerable. Gangs involved in these schemes are experts in counterfeiting tax stamps, mislabeling products, duplicating invoices, etc., and in finding creative ways to distribute the products.
- In Europe, INTERPOL/EUROPOL Operation Opson VII resulted in the dismantling of clandestine factories controlled by organized criminal groups. The pure alcohol for the production of counterfeits was mainly trafficked from Bulgaria.[25]
- In the African region, home-brew and the artisanal production of alcohol are some of the most prevalent types of illicit trade. Interviewed sources confirmed that part of this production is controlled by organized criminal groups, particularly in Nigeria, Cameroon and Burundi. This is particularly the case when the clandestine production becomes part of illicit trade activity, instead of self-consumption and communal use.

Case study: Vino falso: the pervasive issue of counterfeit wine in Italy[26]

In February 2019, Europol supported an operation coordinated by the Italian Carabinieri against a sophisticated organized criminal group involved in counterfeiting the trademarks and distinctive labels of a famous winery in Florence, Italy. The organized criminal group counterfeited at least 11,000 bottles of red wine. The bottles claimed to belong to the high-quality group of *"indicazione geografica tipica"* (typical geographical indication) wines, protected by special legislation. In reality, they contained wine of lower quality. The organized criminal group filled bottles with this low-quality wine and counterfeit wine labels ordered from China. The fake wine was sold on the Italian market as well as in Belgium and Germany. During the investigation, the Carabinieri discovered at least 3 000 corks and around 10 000 laminate caps, as well as a bottling and capping machine. Nine people were investigated and three were arrested.

3.2 Corruption

In view of the numerous and strict regulations imposed on the production, distribution, commercialization and consumption of alcohol, illicit trade in alcohol is particularly prone to corruption as an enabling factor at the different nodes of the supply chain, from the manufacture of raw materials and/or their distribution, to the final delivery to consumers. The problem is exacerbated in countries with heavy regulations and weak institutions. For instance, many Latin American and former Soviet countries suffer from widespread corruption and an excessive or indiscriminate regulatory system, which contributed to the development of large unofficial economies, including an extensive informal alcohol sector.[27]

Case study: Unveiling corruption's hidden hand in surrogate actions

As reported by interviewed sources, low-income African and Latin American countries are places where large illegal sales of surrogate alcohol products take place, predominantly facilitated through corruption both in the public and private sector. Primarily, factory employees and middlemen involved in the production and distribution of industrial and pharmaceutical ethanol divert these toxic substances out of the regular supply chain, by selling them to non-official traders. Although the regulatory frameworks on ethanol not intended for human consumptions vary from country to country, corruption is often an unavoidable step towards the obtention of the precursors by illicit traders.

In places where the consumption of illicit alcohol is primarily driven by the smuggling of genuine products and/or tax leakage, corruption also appears to be a critical facilitator of illicit trade. There are numerous reported cases across the globe of bribing public officials at border controls.[28]

The following examples illustrate the pervasive presence of corruption as a facilitator of illicit trade in the alcohol sector:

- In India, police are paid out by bootleggers either per consignment of illicit alcohol or on a monthly basis. A nexus has also been reported between political parties and the sale of illicit alcohol during elections.[29]
- Weak institutions, corrupt officials and proximity to countries with large shadow economies make Eastern Europe a ready source of smuggled and counterfeit goods facilitated by corruption practices.[30]

- A study on illicit alcohol in Kenya revealed that the main crime facilitating illicit trade in alcohol was bribery and extortion, whereby those who were arrested at illicit alcohol bars would pay the police.[31]

3.3 Money laundering

Interviewed companies report that the magnitude of the illicit alcohol market, in all its forms, is a considerable generator of criminal proceeds. Depending on the type of illicit activity, different actors may be involved, ranging from violent criminal groups ("maras") in Central America, to white collar criminals in Eastern Europe specialized in tax leakage and/or contraband.

Different criminal structures use crime proceeds in different .ways. For instance, as reported by interviewed sources, the "maras" in Central America have connections with extremists and terrorist groups, which may point to proceeds from illicit alcohol having been used to finance terrorist activity. On the other hand, "white collar" criminal groups, who handle considerable amounts of crime proceeds, necessarily need to find ways to hide the illegal origin of their ill-gained profits.

3.4 Forced Labor

As confirmed by interviewed companies, children have been observed working in the illicit production of counterfeit alcohol, including the refilling of bottles with surrogate and substandard products and/or the tampering of legitimate products. The illegal use of minors has also been detected in relation to the production of home-brew and artisanal beverages in significant quantities and intended for its illegal commercialization. Also, in Latin America, companies have reported that local violent gangs frequently recruit adolescents and children to collect empty bottles of genuine brands, which are later refilled with counterfeits and surrogate alcohol. In addition, as outlined in TRACIT's report on "The Human Cost of Illicit Trade: Exposing Demand for Forced Labor in the Dark Corners of the Economy", there are several examples of forced labor used explicitly for illegal or illicit operations including, inter alia, cross border smuggling of illicit alcohol.[32]

4. Impact on the UN Sustainable Development Goals

Illicit alcohol has both direct and indirect adverse effects on the achievement of the SDGs. Below is a brief overview on how these might be affected.

- **SDG 3.** *Good health and well-being.* Illicit alcohol is one of the worst forms of harmful consumption globally. SDG Targets 3.4 and 3.5 call on countries to "reduce by one third premature mortality from non-communicable diseases" and to "strengthen the prevention and treatment of substance abuse, including […] harmful use of alcohol." The main health risks associated with illicit trade in alcohol are created by counterfeit alcohol, fictitious brands and, to a lesser extent, home production.[33]
- **SDG 8.** *Decent work and economic growth.* Illicit trade in alcohol undermines sustainable economic growth, full and productive employment, and decent work for all, as it diverts income from the balance sheets of legitimate businesses. Unfair competition from illicit trade undermines their ability to create jobs and pay taxes.

- **SDG 9.** *Industry, innovation, and infrastructure.* According to SDG 9.5, countries are expected to "enhance scientific research […] including, by 2030, encouraging innovation and substantially increasing the number of research and development workers […]." Legitimate alcohol companies spend a lot of time and money in developing a product and protecting their intellectual property through patents, copyrights, design rights and trademarks. This investment is undermined by counterfeiters copying legal brands which can have a highly adverse effect on investment into scientific research and the industrial growth of the market. Unless intellectual property is protected, innovation and technology development will not be properly incentivized, consequently undermining industrialization and sustainable economic development.
- **SDG 16**. *Peace, justice, and strong institutions.* SDG Target 16.4 calls on countries to "combat all forms of organized crime." The involvement of organized criminal groups in illicit trade in alcohol has been well documented in a number of countries.[34]
- **SDG 17.** *Partnerships for the goals.* For developing countries, widespread smuggling and local production of illicit and counterfeit alcoholic drinks can have a particularly debilitating effect on efforts to improve domestic resource mobilization (SDG Target 17.1), by denying the government a significant source of potential tax income.

5. Institutional framework

This section features a selection of some of the most relevant and innovative initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

World Health Organization (WHO)

Global Strategy to reduce the harmful use of alcohol[35]

Adopted in 2010, the Global Strategy encourages WHO Member States to elaborate public policies to prevent and reduce alcohol-related harm of all alcoholic beverages, including surrogate alcohol. Within the 10 recommended target areas, the instrument focuses on "reducing the public health impact of illicit alcohol and informally produced alcohol."

To implement the above, the Global Strategy identifies key steps to be taken such as increasing international cooperation and information-exchange, ensuring intersectoral communication and considering the "context" while recommending actions.

Based on the Global Strategy, the WHO published a list of concrete actions to, inter alia, combat illicit trade in alcoholic beverages.[36] In particular, the WHO encourages governments to consider measures concerning the regulation of production, wholesale, and sale of alcohol through measures such as a proper licensing system, regulating number of on premise and off premise alcohol sites, regulating all aspects of retail sales of alcohol.

The WHO further prescribes that the informal alcohol market (especially in countries where it is part of the local culture) should be regulated and be brought into the tax system. Awareness building and providing alternative income solutions are identified as ways of reducing informal alcohol sales. Moreover, the WHO expects countries to develop or

strengthen tracking and tracing systems for illicit alcohol by ensuring cooperation and exchange of relevant information on combating illicit alcohol among authorities at national and international levels.

European Union

Council Directive 92/83/EEC of 19 October 1992 on the harmonization of the structures of excise duties on alcohol and alcoholic beverages (Article 27)[37]

The Directive states that, in order to benefit from the excise duty exemption, alcohol not intended for human consumption must be denatured in accordance to required methods laid down at national level. In a nutshell, alcohol can be made non-suitable for human consumption by adding very bad tasting and/or smelling products and (preferably) a chemical marker. This process is called denaturing of alcohol. In order facilitate the circulation of alcohol that has undergone the denaturing process, Commission Regulation (EC) 3199/93 (modified by Commission Implementing Regulation (EU) 2018/1880) included a series of "Euro" denaturing formulations for completely denatured alcohol; as such, completely denatured alcohol can be easily exported/imported in the EU without it being subject to excise.

Council Directive 2008/118/EC of 16 December 2008 concerning the general arrangements for excise duty[38]

This Directive lays down general arrangements in relation to excise duty which is levied directly or indirectly on the consumption of, inter alia, alcohol and alcoholic beverages. In particular, the Directive stipulates the rules applicable to the movement of excise goods within the European Community and also with other non-European countries.

Among the most salient provisions, the Directive aims at preventing tax evasion by setting minimum amounts of alcohol that individuals can transport. Also, it establishes a computerized control system that replaces the predecessor paper-based scheme.

Interpol - Europol

Operation Opson[39]

Opson is an annual law enforcement operation that aims to remove counterfeit and substandard food and drinks from the market and dismantle the underlying organized criminal groups. Participating agencies from law enforcement, customs and national food regulatory bodies conduct checks at shops, markets, airports and seaports to locate and confiscate counterfeit or substandard food products. The latest iteration of Operation Opson resulted in the recovery of more than 15,000 tons of illegal food products, including beverages. The operation mobilized police, customs, national food regulatory authorities and private sector partners to undertake coordinated enforcement actions between December 2020 and June 2021. Checks were carried out by the 72 participating countries, resulting in more than 1,000 criminal cases being opened.[40]

5.2 Select national responses

Bilhar's (India) plan to scan all check-in baggage

In Bihar, India, in 2016 the government made a request with the ministry of civil aviation to make provisions for scanning check-in baggage of all incoming passengers at the airports to check smuggling of liquor into the state. This came after the state of Bihar imposed a

complete ban on the manufacture, sale and consumption of alcohol. The Chief Secretary stated that the Central Industrial Security Force personnel were being mobilized at airports to check for any illicit liquor coming into the state through the air route.[41]

Nigeria's National Agency for Food and Drug Administration Control (NAFDAC)

NAFDAC established an anti-counterfeiting strategy based on the following pillars: 1. Capacity Building; 2. Cutting Edge Technology; 3. Sustained Public Enlightenment; 4. National Collaborations with other law Government Agencies, professional bodies and civil society; 5. International Collaborations; and 6. Attaining WHO Prequalification.

NAFDAC has achieved considerable results in several areas, including awareness raising and issuance of fake alcohol alerts aimed at protecting civil society;[42] confiscation of illicit alcohol.[43]

Panama's 2015-2019 holistic plan

In the five years prior to the COVID-19 Pandemic, Panama undertook a holistic policy to control illicit alcohol. In the first place, the government imposed relatively low tax rates for alcoholic drinks, keeping the prices of legitimate products rather affordable. Secondly, considerable resources were allocated to the fight against illegal alcohol, including coordination between law enforcement agencies and other ministries, i.e., national police, customs and ministry of health. This effort included regular controls and inspections that resulted in the dismantling of criminal networks.

Peru's 2012-2017 campaign

In 5 years (2012-2017), Peru managed to decrease illicit alcohol from 31% (of the total alcohol market) to 26%. In addition, the price gap between licit and illicit products narrowed from 38% to 25%. This holistic strategy included: awareness campaigns; formalization of producers of artisanal alcoholic beverages; stricter import processes; improvement in ethanol regulation and control; and incorporation of inputs such as sugarcane and ethanol into the VAT deduction system to avoid tax. Continuous coordination and follow up have been the key to obtaining such results.[44]

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

Support to law enforcement agencies

Industry stakeholders heavily affected by the smuggling and counterfeiting of their products actively contribute to public-private collaboration programs aimed at enhancing the work of customs/ law enforcement authorities. For instance:

- One interviewed company reported that it regularly uses the Customs Monitoring Application/AFAS.[45] Through this program, IP owners may submit an AFA (Application for Action), putting customs authorities on notice of relevant illegal cargo.
- The same company is actively engaged with customs agencies in China and Scotland, where it facilitates trainings, awareness raising campaigns, use of authentication technology for onsite authentication by authorities, etc.

- The Alliance against Counterfeit Spirits (AACS) works closely with local, national and international law enforcement, regulatory and industry agencies by providing training, sharing intelligence, technical support during inspections, working with ecommerce platforms, raising awareness and formally identifying counterfeit.[46] A recent example is the EU-ASEAN Business Council Training Workshop organized jointly with ASEAN Customs Enforcement & Compliance Working Group. The Workshop, in which AACS represented the spirits industry, aimed to train customs officers to identify real and legitimate goods from their counterfeit or copycat imitations across a broad range of product ranges.

Awareness raising and civil society engagement

- In the past 10 years, one company in the alcohol sector has worked as a partner for governments and society to ensure the illicit alcohol market is properly understood and kept at bay. It has led a global effort to better understand the size, shape, dynamics and drivers of the illicit alcohol markets by commissioning 50 studies 50 studies in 27 countries and a world-wide report. The resulting knowledge has created awareness on health, fiscal and value chain negative impacts and risks worldwide.
- The UK Wine and Spirits Trade Association has partnered with Crimestoppers, a program that allows a member of the community to provide anonymous information about criminal activity, to run a targeted campaign encouraging the general public to report criminals selling illicit alcohol and undermining legitimate businesses. An Alcohol Fraud Reporting Form is available to help users transmit information on fraud involving alcoholic beverages – beers, wines, spirts and ready-made products – in an anonymous manner.[47]

Other measures implemented by private sector stakeholders

- Since mid-July 2019, Facebook and Instagram (Meta) have banned the offering, buying or selling of, inter alia, alcohol between private individuals.[48] Despite this welcome internal policy, however, interviewed sources continue to report sustained levels of illegal transactions of alcohol products via these platforms and the absence of significant proactive measures taken to monitor them. During the same year the National Association of Attorneys General (NAAG) sent letters to leading U.S. online vendors, asking them to undertake certain steps to curtail illegal alcohol sales online. Letters were sent to Craigslist, eBay, and Facebook.[49]
- Empty spirits bottles are collected and/or bought by counterfeiters who refill genuine bottles with counterfeit spirits and apply fake closures. To disrupt this practice, Diageo is involved in a number of glass bottle recycling schemes across their markets, both as a business and in partnership with local governments. As an example, as part of a wider campaign to address illegal alcohol and raise consumer awareness, over 120,000 bottles of the key target brands for counterfeiters were destroyed or recycled in a 6-month period in Colombia and Peru.

Case study: The power of partnership: GS1, industry, and the Mexican government's cooperative success story[50]

As a non-profit entity that develops and maintains standard supply chains systems across the world, GS1 implemented a project aimed at supply chain monitoring, using GS1 standards, along with a few companies such as Santa Lucia, Patrón, Cuervo, and Pernod Ricard and Mexico's Ministry of Economy. The rationale for the initiative was that there had been significant issues with supply chain integrity, including theft and counterfeits. The use of GS1 standards helped increase integrity and protect from counterfeits as well as theft in the supply chain. Better product identification combined with unprecedented 100% supply chain visibility using GS1 standards ensured additional control of product for counterfeit and theft prevention.

6.2 Business driven technological solutions

- **Blockchain Transparency.** Alcohol brands are introducing blockchain technology to label their products and facilitate the verification of their authenticity. The incorporation of blockchain also serves to ensure transparency, as this technology guarantees the immutability of information through a distributed (and in some cases decentralized) and highly secured ledger. Through scanning a code on a bottle, closure or label, consumers can access the ledger with information about the product, its quality, how it was manufactured and the nodes of the supply chain that it followed.[51]
- **Control towers and enhanced security measures in exposed territories.** Some countries are heavily affected by organized crime to the point that law enforcement agencies have no control over certain key territories. As a result, land transported cargo of alcoholic beverages can be recurrently hijacked by violent criminal groups. To mitigate this problem, companies implemented technological solutions consisting of the establishment of cooperation networks between a handful of private-sector entities, including independent cargo transporters.[52] As a first stage, the partners invested in security equipment for their vehicles, including dash cameras, radios, geolocators and self-destructive safe boxes. Secondly, they established control towers to monitor all vehicles which travel in organized convoys.
- **Technological solutions to prevent counterfeiting in wine and spirits.** There are numerous technological tools aimed at authenticating legitimate products. One of them is based on the insertion of microscopic holes that can be applied to labels, counter-labels or on the closure, the aim being to provide brand owners with real-time intelligence.[53] Pernod Ricard has implemented a system called "Le Code" which is a multilayered smart security sticker composed of two codes on the same label: a QR code outside of the capsule and a 3-digit hidden code inside the capsule. Already applied to millions of bottles, this innovative solution is generating more than 3,000 consumer scans a day.[54]

7. Recommendations

The following recommendations are aimed at helping combat illicit trade in alcoholic beverages by governments and private entities:

Alcohol tax, fiscal marking, and tax stamps

- **Rationalize tax policies and subsidies to ensure that they do not incentivize illicit trade, smuggling, adulteration and tax leakage**. Excessively high tax and tariffs are a direct illicit trade driver. Tax policies need to account for various demand-related factors including overall consumption, consumers' preference, price, level of alcohol, income levels and the ensuing affordability of products. When taxes increase to the point that prices exceed consumers' purchasing power, illicit beverages naturally become cheaper alternatives, illegal production propagates, unsafe products enter into the market and fiscal income declines.
- **Coordinate tax policies between neighboring jurisdictions.** Differences in excise and other taxes between neighboring countries and/or tax jurisdictions within the same country have the additional effect of increasing the likelihood of contraband. Consequently, policy makers from different tax jurisdictions are encouraged to align their tax policies. This becomes particularly relevant between jurisdictions that already suffer from substantial illicit trafficking through their borders and/or distribution channels that connect them. This should be a priority both for origin and destination tax jurisdictions.
- **Normalize import of foreign spirits.** Where imports of foreign spirits are officially banned, the market's legitimate demand for imported products is artificially suppressed, which create strong incentives for illicit operators to import alcohol through non-tax-paid channels from neighboring countries or to produce counterfeit versions of the foreign spirits. Policy reforms should replace import bans with tax policies that boost government revenues.
- **Carefully consider the implementation of tax stamps and fiscal marking regimes.** Empirical evidence has shown that tax stamps/fiscal marking have not always been effective in accomplishing their primary goals: increasing tax revenue and curbing illicit trade. On the contrary, on many occasions these features have had the opposite effect by creating a driver for other forms of illicit trade (e.g., counterfeit); they often generated a false sense of security for consumers - as the stamps can be easily counterfeited or obtained illegitimately-; and they did not necessarily increase tax collection, as evidenced in the Ecuador SIMAR case.
- **Consult all relevant stakeholders to formulate win/win tax policies and regulations.** Policy makers should engage in sustained dialogue with all stakeholders to ensure that tax policies create shared value for consumers, government, society, and the licit value chain over the long-term. It is important to avoid applying excessive regulatory requirements to licit market players of the whole value chain and to reduce price gaps between licit and illicit alcohol markets.

Manufacturers, distributors, wholesalers, retailers and distribution channels

- **Streamline alcohol licensing regulations in order to incentivize local producers to legalize the production and consumption of artisanal products.** A rational alcohol policy framework requires transparent licensing rules that facilitate compliance. Excessive restrictions on the issuance of licenses can encourage bar owners and hoteliers to strike 'deals' that fall outside the law, which may lead to the emergence or the consolidation of the black market.
- **Contextualize the use of technological solutions.** There is no silver bullet to combat illicit trade in alcoholic beverages, as illicit traders are particularly skillful when it comes to avoiding controls. For instance, if use of a certain technology makes it impossible to counterfeit a tag on a bottle, illicit traders will find other creative ways to disrupt the supply chain, e.g., bribing operators or using parallel distribution networks. For these reasons, it is important that stakeholders carefully assess which technological solution they plan to implement, taking into account the context of the market in which they operate.
- **Mobilize online platforms and their tools.** Online platforms should use the full range of tools at their disposal to support governments and the legitimate industry sector in countering illicit trade in alcoholic beverages. Some actions include:
  - Implementing "know your customer" (KYC) policies.
  - Implementing proactive measures in order to prevent illicit alcohol to be sold/promoted, especially when platforms' internal policies prohibit the sale of alcohol products.
  - Implementing regulations to ensure that the listings of illicit products are quickly taken down.
  - Launching awareness campaigns on smart online purchasing.
  - Online platforms could review the current content posted on their websites and remove illegal postings for the sales and/or transfer of alcohol products.

Law enforcement, foreign trade control and criminal laws

- **Provide law enforcement authorities, in particular customs agencies, with greater resources to:**
  - Control borders and blind entry points.
  - Thoroughly review incomplete/suspicious documentation and sharing information with rights holders.
  - Identify suspicious traders, including the performance of market sweeps (i.e., screening websites to identify breaches of consumer law in a given online market) to seize and challenge traders selling smuggled product.
  - Focus on dodgy bill of ladings.
  - In relation to express couriers/postal systems, gather enough intelligence and take enforcement actions.

- In relation to FTZs, target large wholesalers which are not authorized distributors of the brand owners.
- In relation to online platforms, gather enough intelligence and conduct offline enforcement.

- **Control of local production and imports of ethanol.** Improve regulation and enforcement of imports and local production of ethanol, including denaturing, licensing and import permits to prevent ethanol smuggling and illicit trade.
- **Equip law enforcement agencies with enhanced technology.** While it is impossible to physically monitor, control and secure borders through manpower alone, the use of advanced technologies, such as unmanned aerial vehicles (UAV), embedded sensor, cargo shipment data mining with risk analytics, next generation surveillance cameras and robotics have aided customs and border patrol agencies in deterring the flow of illicit trade and smuggling operations. In particular, X-Ray and barcode scanning equipment can be utilized in investigations and surveillance with local law enforcement agencies.[55] By leveraging technology, customs agencies can alleviate some of the burdens associated with the need to inspect massive volumes of transported goods.[56]
- **Impose and enforce sanctions and penalties at levels sufficient to deter criminal activity.** Imposing deterrent administrative, criminal and civil penalties for illicit trade in alcohol should be a priority to prohibit illicit traders from exploiting countries and markets with the weakest penal regimes. In addition to court-imposed penalties and fines, consideration should be given to rescinding business licenses from retailers, manufacturers and distributors involved in illegal trade.
- **Criminal law provisions should be amended to deter illicit trade in alcoholic beverages**
  - Erasing or tampering traceability information (lot identifications) should be prohibited and criminal sanctions should be imposed. Many countries still do not require traceability information on the product, and the removal of existing traceability information is not prohibited by law while it can have harmful effect on consumer safety by preventing products recall and identification of faulty products. Removals of lot identification are widely used by counterfeiters for refilling purposes and smugglers.
  - Stringent IP laws and tough penalties on tax evasion and any practices jeopardizing food and beverage security are needed. In addition to court-imposed penalties and fines, consideration should be given to rescinding business licenses from retailers, manufacturers and distributors involved in illegal trade.

Raising awareness and fostering collaboration

On many occasions, consumers may not be aware of the illegal origin of the products that they purchase and/or the negative impact that the underlying illegal activities may have. The lack of awareness also affects decision makers and law enforcement agencies. This situation undermines multisectoral/interagency collaboration, which is key to tackle illicit trade in alcohol. For these reasons, it is recommended that stakeholders:

- Raise awareness of the threats posed by illicit alcohol on public health and governmental revenues.
- Promote the creation of local private-public partnerships to bring key industry and government stakeholders together to define strategies related to the topic of illegal alcohol.

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IV. FAST-MOVING CONSUMER GOODS, COSMETICS, LUXURY AND ELECTRONIC GOODS

1. Overview and findings

Counterfeit goods and trade dynamics

What is illicit trade in counterfeit goods?

The illicit trade in fast-moving consumer goods (FMCG), luxury and electronic goods[1] includes the manufacturing, distribution, and sale of counterfeit items.

Counterfeiting refers to the infringement of the legal rights of an owner of intellectual property. In particular, the World Trade Organization defines counterfeited goods as any goods, including packaging, bearing without authorization a trademark which is identical to the trademark validly registered in respect of such goods, or which cannot be distinguished in its essential aspects from such a trademark, and which thereby infringes the rights of the owner of the trademark in question under the law of the country.[2]

The global trade in counterfeit and pirated goods accounts for the largest economic value of all forms of illicit trade. Reportedly, the market size of counterfeit goods is worth USD 3 trillion or 3.3% of global trade.[3] According to the Global Brand Counterfeiting Report 2018, the volume of international trade in counterfeit goods reached $1.2 trillion in 2017 and this number is expected to keep on growing.4 In another report by the OECD on fake information and communication technology (ICT) goods, it was noted that up to 6.5% of the total ICT goods trade were fake.[5]

Further, the COVID-19 pandemic has exacerbated the problem of counterfeit consumer goods purchased online and shipped through small parcels.[6] Due to the restrictions imposed on usual trade channels, both legitimate and illicit industries saw a shift in trade routes. While the long-term impacts are yet to be observed, preliminary information from brand owners, government officials and law enforcement agencies around the world indicate an increased availability of illicit goods online.[7]

The EU Intellectual Property Office (EUIPO) and the Organisation for Economic Co-operation and Development (OECD) note that, "Illicit trade in fake goods is a significant and growing threat in a globalized and innovation-driven economy. Its damaging effects on governance, innovation, the rule of law and, ultimately, on democracy cannot be underestimated."[8]

Counterfeits are produced outside the normal channels of commerce with little regard to environment, health and safety regulations and standards—and as a result pose risks to long term economic growth, consumer health, livelihoods, and the environment. For example:

- Counterfeit FMCG goods are directly dangerous to human health and consumption. There are also instances of counterfeit baby formula containing substandard substances.[9]

- Counterfeit cosmetics of luxury brands would not meet the standards of safety and testing required by law, thereby increasing the risk of use substandard products on skin.[10]
- Fire hazards being caused from poorly wired electronic goods and sub-standard.[11]
- The ubiquity and high profits from counterfeits, coupled with low risks of detection, prosecution and penalties, generates significant illicit proceeds for criminal enterprises. As a result, money laundering is frequently an indispensable criminal practice related to intellectual property rights (IPR) crime, with illicit proceeds also be used to finance other crimes, such as drug and human trafficking.

2. *Modus operandi*

2.1 Supply chain modalities

While counterfeit goods originate from all economies, China remains the primary economy of origin. Counterfeit goods follow complex trading routes, exploiting multiple intermediary transit points. Many of these transit economies, for example Hong Kong (China), Singapore or the United Arab Emirates, are well developed, high-income economies and important hubs of international trade.[12]

To escape detection, counterfeiters use complex trade routes, infiltrate legitimate supply chains and use transshipment practices. Counterfeiters constantly change modes of operation, trade routes and concealment methods to avoid detection.[13] They also exploit law enforcement's limited capacity and ability to monitor tens of thousands of containers that are traded across borders each day.

Some common supply chain modalities include:

- Hiding counterfeit goods in containers, mixing them with legitimate goods to deceive customs.
- False import/export declarations, using legitimate import companies' names with false contact details on shipping manifests.
- Routing products through different destinations to conceal country of origin.
- Transporting raw materials and assembling them in destination markets.
- Sending products separately from trademark infringing material.
- Exploiting transit points with weak governance.
- Using free trade zones (FTZs) with weak surveillance and enforcement of IPRs.[14]

Sector specific examples:

The following case studies illustrate some of the supply chain dynamics at play in each of the industry sectors under consideration.

FMCG

- A report from the Authentication Solution Providers' Association (ASPA) – a key Indian business organization – stated that the COVID-19 pandemic saw a surge in the rise of counterfeit FMCG, as criminals adapted to the new trade environment and founds ways to infiltrate legitimate supply chains. These methods included using the latest manufacturing and printing technologies to duplicate finishes, print boxes, labels, codes, and packaging that mimics genuine products perfectly. Among the top 5 sectors which constituted a major part of the counterfeit goods was FMCG packaged goods and essential items.[15]

Luxury goods

- In 2021, an operation by Hong Kong customs agencies led to the record seizure of goods worth USD 154 million that were headed to mainland China through a river barge, which included a wide array of items such as watches, handbags and cosmetics. Since the recent crackdown on sea routes, customs investigators stated that criminal syndicates have since turned to using other means, including river trade vessels, to smuggle goods to the mainland.[16]
- In 2018, 33 individuals were charged by the U.S. Immigration and Customs Enforcement's (ICE) Homeland Security Investigations (HSI) for being involved in a half billion USD smuggling racket of luxury goods. The defendants used various methods for trafficking counterfeit goods manufactured in China, including bringing them in 40-foot shipping containers on ships to the United States, smuggling through ports of entry disguised as legitimate imports, and distributing them throughout the country. The counterfeit goods included items such as Louis Vuitton and Tory Burch handbags, Michael Kors wallets, Hermès belts and Chanel perfumes.[17] Shipping manifests contained false information, describing the merchandise as ventilation fans, vases and plastic hangers. The container importers falsely used the identities of legitimate import companies on customs forms, in order to deceive customs brokers and officials. The phone numbers and email addresses provided were those of the counterfeit importers, who used burner phones and email accounts obtained using false identifiers to conceal their operations. Once cleared by customs, the containers of counterfeit items were shipped to self-storage facilities, where their contents were separated for sale and delivery to wholesalers and retailers. Analysis of customs declarations linked 107 other container shipments to the counterfeit importers, suggesting that a significant volume of counterfeit trade likely passed through the US border undetected.[18]
- In 2021, law enforcement in the US curtailed a USD 130 million worth counterfeit goods scheme that included fake UGG Boots, Nike Air Jordan Sneakers, Timberland boots and Beats headphones. Generic goods were imported into the port of New York and New Jersey from China. Thereafter, counterfeiters applied brand labels to those goods in workshops. These counterfeit-branded goods were then sold to local retailers and wholesalers.[19]

Electronics

- The European Semiconductor Industry Association (ESIA) reported that in 2016 more than one million counterfeit semiconductors were seized by a Joint Customs Operation (JCO) code named "Operation Wafers." The operation was coordinated by Dutch customs and conducted with the cooperation of the European Anti-Fraud Office (OLAF) and customs authorities from 12 EU member states. The parts arrived in Europe from China and Hong Kong by post and express courier.[20]

Case study: Pirated pathways: a study of the counterfeit DVD supply chain in China[21]

China is the largest source of all counterfeit goods across the world. Counterfeiters have set up the most cost efficient and deep distribution channel throughout China. For example, DVDs which were USD 12-15 world over were being sold in China for only USD 1-2 dollars. When they produce counterfeit DVDs, manufacturers do not put any mark on the products. Generally, they have separate warehouses, a long distance from the factories, or they cooperate with wholesalers. Manufacturers distribute the products to the warehouses or wholesalers without brand name, and in the warehouses or wholesalers' warehouses, the counterfeiting seals are sent with the products. Finally, wholesalers will put the trademarks on the products before they are distributed to the market.

2.2 Transport Dynamics

Counterfeit FMCG, cosmetics, luxury and electronic goods are shipped by virtually every mode of transport. In terms of number of seizures, counterfeit trade via small parcels is growing and becoming a significant problem in terms of enforcement. However, in terms of value, counterfeits transported by container ship clearly dominate.[22] Seaborne transport of counterfeit goods accounts for more than 80% of the volume of merchandise traded globally and around 70% of the value of the trade.[23]

OECD reports that between 2014 and 2016, sea shipments were involved in around 82% of the seized value of counterfeit perfumes and cosmetics by customs authorities worldwide, 81% of the value of fake footwear and 73% of the value of customs seizures of fake foodstuff and toys and games.[24] China was the largest provenance economy for container shipments, making up 79% of the total value of maritime containers containing fakes and seized worldwide.[25]

Traffickers tend to ship counterfeit products via complex trade routes, using several transit points. This is done for several reasons, including:

- "Cleansing" of all the documents and camouflaging the original point of production and/or departure.
- Establishing distribution centers for counterfeit goods (e.g., in free trade zones) and for transshipping them in smaller orders to their destination points.
- Processing of products, often by adding counterfeit trademarks and/or repackaging or re-labelling goods.

Consequently, in most cases, it is difficult for customs officers to determine the "producing economy", not only because of document cleansing, but also because the actual process of counterfeiting may not take place in the same economy as the production of a given product. A product may be manufactured in one economy, and its labelling with counterfeit logos or packaging into trademark-infringing packages take place in another closer to destination markets and with weaker IP enforcement.[26]

Sector specific examples:

The following case studies illustrate some of the transport-related dynamics at play in each of the industry sectors under consideration.

Luxury goods

Fake clothes and fabrics enter the EU and the US from manufacturing economies and transit hubs mostly through small parcels as well as air and sea transport. Road transport is used for trafficking fake clothes and fabrics from Middle Eastern transit economies to the EU.[27] Of late, and in light of the COVID-19 pandemic, small parcels of fake footwear are also being increasingly shipped across borders.[28]

Electronics

The United Arab Emirates is a central transit point for re-exports to Africa through large containers by sea, but also by road to other Middle East economies and by mail and air to the EU.[29]

2.3 Hotspots

2.3.1 Online

A major concern surrounding e-commerce platforms is their high potential to be used to commit fraud. Counterfeiters are increasingly abusing e-commerce channels to sell their goods. Brand owners and governments are deeply concerned at the scale at which counterfeiters are trading online, allowing consumers direct access to counterfeits.

Brand owners report the following as key methods through which counterfeit goods are put up for sale online, and how this trade is effectively facilitated and supported:

- Creating fake websites, some of which try to emulate proper websites.
- Web blogs or social network websites, which indirectly sell counterfeit items by displaying information leading to a possible point of sale (e.g., email address, WhatsApp number, link to a stand alone). The blogs or website can be independent or associated with well-known social networks.
- Proper e-commerce retailers, including auction sites, which do not control properly their distribution and supply chain and sell unknowingly counterfeit products. Many cases have been reported of lawsuits against large e-commerce retailers for the sale of counterfeit products.
- A growing area is mobile apps such as Instagram and WhatsApp. In some cases, messages are sent directly to people to suggest websites, which offer large discounts on popular brands.[30]

- Fraudulent advertisements are rapidly emerging as a new trend driving unsuspecting consumers to third party illegitimate e-commerce sites that trade in counterfeit goods.[31] For example, many popular international brands were targeted by fraudulent adverts on Instagram and Facebook since 2017, some of which received up to a quarter of a million views before they were detected.[32]
- Especially in the luxury goods and cosmetics sectors, there has been a substantial increase in counterfeits online, which creates an ever-challenging space for brand owners to monitor. In luxury goods, a massive 87% of counterfeits are acquired online.[33]
- Instagram's checkout feature is a prime example of how counterfeiters are able to find their target audience and publish a sale through sponsored Instagram 'Stories'. Since Stories are only available only for 24 hours, the risk of detection of illicit goods offers through these means within those 24 hours is very slim. Further, in 2016, it was reported that up to 20% of posts relating to top fashion brands on social media that were analyzed featured illicit products. In a more recent report, they found over 1.6 million Stories every month were blatantly advertising fakes.[34] With the platform reaching the 1 billion monthly user mark recently, this number is only going to grow giving illicit traders a much wider customer base.[35]
- While Instagram is one of the most popular social media platforms for counterfeiters, their first choice of direct contact with their end customer is WhatsApp. Almost 57% of counterfeiters choose it as their commercial instant messaging tool.[36] The absence of regulations and third-party monitoring makes it an ideal platform for conducting illegal sales. All that is needed is a phone number to create an account, which can also be changed quite easily. This makes it very challenging to locate those involved in this type of illicit trade.[37] WhatsApp's end-to-end encryption gives counterfeiters (and those involved in many other criminal activities) an array of opportunities at hand if they are not tracked down on social media or on traditional e-commerce platforms. Further, apps like WeChat and WhatsApp allow direct payments on their platform using their 'payment option', making transactions quick and simple removing the ability for law enforcement to 'follow the money' in these types of criminal transactions.
- Trusted and protected payment methods like Paypal are used by more than 35% of counterfeiters, which make it an easy choice for the consumer and almost impossible to retrace, due to encryption. This provides potential buyers with a sense of security when purchasing goods from illegal sources.[38] The secured payment options have also helped counterfeiters provide a message of trust to their client base. Paypal for example, has a 'Pay After Delivery' option, giving buyers more confidence when buying counterfeiters' products. If they see that the quality is poor upon receiving their purchase, they simply send it back, without having to go through the process of a refund.[39]
- Technology has also made the entire line of production and supply far more conducive to illicit trade in counterfeit goods, from 3D printing generating better quality fakes to the simplification of checkout systems on social media.

- Although it is still difficult to measure the impact of 3D printing in counterfeit goods, it translates into major improvements in production quality for counterfeiters. All that is needed to create counterfeit items with 3D printers that are identical to their original version are the design blueprints, which can be found in the deep/dark web. The 3D production technology is less labor-intensive, which diminishes the production costs significantly, making it an attractive new ally for counterfeiting products.[40]

2.3.2 Free Trade Zones

Free Trade Zones offer a number of incentives to attract business and trade, including nondiscriminatory access to the zone, streamlined customs procedures, import and export duty exemptions, and liberal foreign exchange policies. However, these zones are also directly linked with the sale of counterfeit goods.[41]

In 2019, the OECD acknowledged "that some economic operators may take advantage of inadequate oversight, control and the lack of transparency in FTZ to commit […] intellectual property rights (IPR) infringement."[42] It is noteworthy that the existence, number and size of FTZs in a country correlate with increases in the value of counterfeit goods exported by that country's economy.[43]

Given that lightly regulated FTZs are attractive to parties engaged in illegal and criminal activities, their continued growth makes an important context for the trade in counterfeit goods, especially when governments do not police them adequately.[44] Once introduced into an FTZ, counterfeit goods may undergo a series of economic operations, including assembly, manufacturing, processing, warehousing, re-packaging, and re-labelling. Once completed, the goods can be imported directly to the national territory of the hosting state or re-exported to another FTZ, where the process is repeated.[45]

2.3.3 Postal systems/ express couriers

In terms of number of seizures, trafficking fakes by small parcels is growing and creating significant enforcement challenges. The small parcels used to deliver counterfeit items are shipped either through postal or express services.[46] In 2018, OECD noted that nearly 63% of customs seizures of counterfeit goods were in the form of small parcels.[47]

Trading through small parcels enables criminal networks to reduce the chance of being detected as the proliferation of small shipments raises the cost of checks and detention for customs agencies.[48] A survey conducted the Universal Postal Union (UPU) with the support of TRACIT found a large number of postal operators reporting counterfeit goods as a key issue.

Case study: Navigating counterfeit threats: the US Postal Service experience[49]

The US Postal Service's (USPS) international small parcel business increased 232% from 2013 to 2017, when it received nearly half a billion packages. Out of this amount, USPS only had critical safety information on 36% of them. USPS, with the support of the US Customs and Border Protection, reviews all incoming parcels to the best of their ability, but without the relevant accompanying data, pinpointing suspicious packages is difficult. To international criminal counterfeiters, this is a ripe business opportunity. Rather than transporting counterfeits through large cargo shipments, criminals can look to small parcel mail.

FMCG

Interviewed sources from a majority of Middle Eastern countries reported that fast moving consumer goods are among the top three sectors where postal systems are used for illicit trade. They noted the challenges in detecting such goods as well as the lack of proper resources both in terms of manpower and technology to support detection efforts. Further, counterfeit FMCG manufactured in China are proliferating through the rest of the world through small parcels. Brand owners report extreme difficulties by law enforcement agencies as counterfeiters use different logistics companies and express carriers to avoid detection and change packing so as not to be discovered by technology systems.

Luxury Goods

Postal parcels were found to be the main conveyance method for fake leather goods used by counterfeiters in producing economies and transit points to ship goods to the US and the EU.[50] Small shipments are particularly used for footwear, watches, leather articles and handbags, jewelry, perfumes and cosmetics.

Electronics

The postal channel remains a popular route for small parcels of fake electronics goods. In 2016, around 7.3 million mobile phones and accessories in mail parcels were intercepted and seized.[51] One of the reasons why small parcels are a popular method for transporting counterfeit electronics is that these items are small but expensive and they become outdated quickly. Parcels would therefore be the quickest way to have them delivered.[52] As per a study conducted by the OECD, China, Hong Kong and Singapore are the countries with the highest relative propensities to export fake electronic goods in small parcels.[53]

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

There is significant evidence linking counterfeiting to organized criminal groups (OCGs).[54] These latter are involved throughout the whole supply chain – from production to the distribution of counterfeit goods.[55]

Moreover, the recent surge in consumer shopping online has created an opportunity for OCGs to sell counterfeits online. OCGs have proven to be adaptable with dynamic operations to meet the demand and exploit avenue for profit generation.[56] Groups such as the Mafia and Camorra in Europe and the Americas, and the Triads and Yakuza in Asia, have diversified into the illicit trafficking of counterfeit goods, while at the same time being involved in criminal conduct ranging from drug and human trafficking to extortion and money laundering. For instance, the Camorra has a history of selling counterfeit luxury goods manufactured in Asia, using the same marketing channels as legitimate products, while others, such as the 'Ndrangheta, have established extensive contacts with Chinese groups to import counterfeits.[57] More recently, it has been indicated that the weapons used in the attack on the Charlie Hebdo offices in Paris were partially financed through the sale of fake items.[58]

3.2 Corruption

Corruption and bribery are inherently linked to the trade in counterfeit goods, which is especially the case when the goods are traded across borders.[59] High levels of corruption are indeed one of the key factors that affect the degree to which counterfeits can be exported and imported. Further, when criminals are caught trading in counterfeit goods, corruption through the payment of bribes ensure their release or minimize the related sentences. This impunity is a factor that contributes further to the growth of this trade.[60] According to FICCI's CASCADE report, smuggling of FMCG in India is directly linked to various types of crime, such as evasion of tax and import duties, bribery and corruption of public officials, and money laundering. Some researchers have also pointed out that the level of smuggling is correlated with the level of corruption in partner countries.[61]

3.3 Forced Labor

The United Nations Office on Drugs and Crime (UNODC) recognizes that abuse of labor in the production and distribution of counterfeit and pirated goods is widespread. UNODC reports that "migrants who have been smuggled into a country are coerced into selling counterfeit goods while irregular labour, including children, can be used in the production of counterfeit items."[62] UNODC goes on to argue that: "given the illegal nature of counterfeiting, labor conditions could be far worse than those seen in legitimate companies where, despite regulations, mistreatment can happen. Severe labor abuses in the supply chains of even some of the world's major brands have been well documented, with instances such as threats of violence, exposure to hazardous materials, and deadly working conditions all having been noted. If this can happen in global companies whose supply-chain practices are at least open to some degree of scrutiny, then the situation would be much worse for workers in a clandestine setting."[63]

The International Labour Organisation (ILO) further reports that clandestine workshops that have specialized in copying and pirating well-established brand names employ large numbers of illegal immigrants and employ "labor practices that are contrary to the most rudimentary principles of respect for human rights at work." In some cases, identity papers of immigrant workers are confiscated, and workers are housed in hazardous and unhealthy conditions.[64]

There are numerous examples where potential victims of forced labor have been identified in connection with counterfeiting apparel, footwear and luxury goods:

- In January 2021, the Police of São Paulo, Brazil, conducted a search and seizure in a property in the Belém region, after receiving reports that children were working and living in a clandestine sewing factory producing counterfeit Lacoste garments. During the seizure, the police found 12 people, including children and family members, that were working and living in the factory.
- In December 2020, the UK Gangmasters and Labour Abuse Authority (GLAA) found a counterfeit apparel factory that used exploitative practices and coerced workers to live at their workplace.[65] Workers were found sleeping on mattresses in the factory. This triggered further investigation into allegations of suppressed earnings and evidence that money paid to workers was being extracted back to the company.[66]

- In October 2017, 31 Bolivian victims of trafficking in persons were found in a Chinese run counterfeit factory of fake Tommy Jeans t-shirts in Buenos Aires, Argentina.[67]
- The Guangdong Province of China is one of the global epicenters for production of counterfeits. One witness noted that there were "two dozen sad, tired, dirty children, ages eight to 14, making fake Dunhill, Versace, and Hugo Boss handbags on old, rusty sewing machines."[68]
- In 2019, reporters from Norwegian TV2 and a representative from investigative firm Cerberus IP observed children manning machines as they walked through a Turkish factory producing counterfeit Louis Vuitton handbags.[69]
- In October 2017, in Manchester, UK, during a series of raids conducted by police and immigration officers that led to the seizure of counterfeit versions of Adidas, Nike, Louis Vuitton and Rolex it was discovered that potential victims of slavery were identified and were directed to support services to receive protection and rehabilitation.[70]
- In a 2016 case in the São Paulo Metropolitan Region of Brazil, Guillermo Rivas Quispe, a Bolivian citizen, was charged with the crime of forced labor after authorities found that 14 Bolivian workers in his counterfeit clothing factory where they worked for more than 15 hours per day, at below minimum wage, in an unhygienic, unhealthy and dangerous environment, which lacked sanitary facilities, an adequate place for meals and drinking water. Workers had their wages withheld and told investigators that they were afraid of their employer.[71]
- In August 2020, an investigation into a human trafficking network abusing Senegalese manteros (Argentinian street vendors who sell counterfeit merchandise on streets) in La Plata was launched. The majority of the Senegalese were undocumented and has been subjected to coercion, injuries and threats. Reports found that the Senegalese immigrants were promised work in hotels and restaurants for which they paid large amounts of money for transit into Argentina. However, upon their arrival into Argentina, the mafia organization withheld their passports in lieu of debt repayment.[72]

3.4 Money Laundering

As a global, multibillion dollar crime, OCGs have cashed in on the trade in counterfeit goods. The illicit trafficking of counterfeit goods offers criminals a complementary source of income and a way through which they can launder money.[73] Additionally, monies received from the sale of counterfeit products can be channeled towards the further production of fake goods or other illicit activities. Criminals also feed fake goods into the legitimate supply chain which provides them with 'clean' money.[74]

Historically, Italian criminal organizations are known to be actively involved in trafficking counterfeit and pirated products. Investigations have revealed that counterfeit goods are often sold at retail. According to the Italian National Antimafia Bureau, the Italian mafia group, Camorra, has been known to also control legal commercial activities through which it introduces counterfeit goods into the market, creating a significant economic-financial web across multiple countries, particularly in Western Europe, the United States, Brazil, Canada, and Australia. This provides an additional source of revenue for the criminal group, which is then reinvested in a variety of legal commercial activities, thereby increasing their

operational capacities. The Italian National Antimafia Bureau also highlighted the growing links between Chinese criminal groups and the Neapolitan Camorra. They conducted investigations throughout Italy which confirmed the nexus of the organizations dealing in counterfeit goods and other forms of illegal trading and money laundering globally.[75] Other criminal groups found to be actively involved in the sale of counterfeit goods and money laundering include the Chinese Triads, Japanese Yakuza and the Russian Mafia.[76]

Case study: Operation Gomorrah[77]

In 2010, the "Gomorrah" case was successfully investigated, involving the trafficking of counterfeit electric products, such as electric generators and drill hammers, produced in China and distributed all over the world via Naples. The criminal group linked to the Camorra comprised more than 60 people, mainly Italian, with cells all over Europe. Investigations also revealed that profits were laundered via Australia and Iceland. Over 800 tons of counterfeit products valued at €12 million were seized and assets exceeding €16 million were recovered.

Case study: The counterfeit trail: analyzing the nexus of money laundering and counterfeiting in the United States[78]

In a recent indictment in the United States, a federal court in Brooklyn charged seven defendants with participating in a counterfeit goods scheme in which they imported generic goods into the United States from China, applied brand labels to those goods in workshops, some of which were controlled by the defendants, and then sold those counterfeit branded goods to retail and wholesale purchasers. The charges against the defendants include conspiracy to traffic and trafficking in counterfeit goods and money laundering, to the tune of around USD 130 million.

4. Impact on the UN Sustainable Development Goals

Illicit trade in FMCG, luxury goods and electronics via counterfeiting activities has both direct and indirect adverse impacts on the Sustainable Development Goals (SDGs). Below is an overview of how various SDGs may be affected.

- **SDG 1.** *No poverty.* Counterfeit goods prevent the legal growth of job markets, hinder employment and therefore stifle the overall economic growth of a country, thereby increasing poverty in those regions.
- **SDG 3.** *Good health and well-being.* Counterfeiters of FMCG, luxury goods and electronics sidestep health and safety regulations by producing and selling substandard products. Examples of these may include counterfeit batteries and lighters that may explode, toxic paint on toys, counterfeit electronic goods that may explode, counterfeits of luxury goods that may use carcinogenic dyes etc.
- **SDG 4.** *Quality education.* Counterfeit FMCG violate the intellectual property rights of brands, thereby undermining creativity and industry and the hard work gone into these products. Further, cultural and educational materials are also copied thereby hindering innovation and eroding the investment into these works.
- **SDG 6.** *Clean water and sanitation.* Traders in counterfeit goods do not follow safety standards and regulations for the discharge of toxic chemicals. From manufacture to final destruction and disposal, counterfeit goods pose an ongoing threat to the environment and in particular SDG 6.3, which aims to reduce water pollution through release of hazardous and toxic chemicals as runoffs.

- **SDG 8.** *Decent work and economic growth.* It has been established that illicit trade negatively impacts the economic growth of a country. Governments and businesses are impacted by reduced returns to innovators and creators, lost tax revenue, and the diversion of public and private resources from more productive ends. These costs create a significant drag on the growth of knowledge-based economies, but also result in significant job losses. Further, intellectual property theft also undermines innovation and creativity, thereby negatively impacting industrial growth.
- **SDG 9**. *Industry, innovation and infrastructure.* IP theft deters and discourages innovation, reducing incentives for companies to invest in R&D and inhibits creative industries from realizing their full potential.
- **SDG 12.** *Responsible consumption and production.* Those involve in counterfeiting activity disregard the principles underpinning sound waste management policies. Further, production of counterfeits often involves unethical and poor working conditions, use of child labor during the manufacturing stage and coerced/ unregulated migrants for production and selling purposes.
- **SDG 15.** *Life on land.* Due to improper waste management on the production front, counterfeit goods are responsible for pollution on land by improper waste management, due to which there are runoffs that harm soil quality.
- **SDG 16.** *Peace, justice and strong institutions.* Counterfeit markets have been found contributing to terrorist financing and fostering further criminal activity, thereby adversely impacting peace and legal systems in a region.

5. Institutional framework

This section features a selection of some of the most relevant initiatives implemented by inter-governmental organizations and domestic agencies worldwide. While there are several efforts to combat counterfeiting, the below addresses those initiatives that are specific to the sectors under discussion. It also includes larger efforts against all forms of counterfeiting that have been impactful or have significant potential in mitigating the problem.

5.1 International policy, regulatory and law enforcement responses

World Intellectual Property Organization (WIPO)

The Advisory Committee on Enforcement (ACE)

Established in 2002 by the WIPO General Assembly, the ACE gathers WIPO's Member States, international organizations and NGOs with the goal of providing technical assistance and coordination in the field of enforcement (norm-setting is explicitly excluded from the mandate). Within this framework, the ACE focuses on:

- coordinating with public and private organizations to combat counterfeiting and piracy;
- public education;
- assistance;
- coordination to undertake national and regional training programs; and
- exchange of information on enforcement issues.

The Secretariat for the ACE – and the implementation of its decisions - is entrusted to WIPO's Building Respect for IP Division.

UNODC-WCO

Container Control Program (CCP)

The CCP aims to fortify the structures and processes which allow for the application of sustainable laws for States and selected ports to minimize the exploitation of maritime containers for illicit trade, including counterfeiting. The program promotes cooperation among multiple entities that deal with maritime security issues, including customs and border agencies, the police and port authorities. It also engages the private sector to share information and intelligence needed to red flag suspicious consignments.[79]

WCO

Practical Guidance on Free Zones

The Guidance aims to enhance the customs procedures/controls to be globally applied in FTZs, while effectively supporting the healthy development and competitiveness of these areas.[80] The FZ Guidance consists of seven core elements, with practical guidance and associated best practice by WCO Members. These include the territoriality issue of FTZs, full cooperation and involvement of customs, the use of IT by customs, control, surveillance and inspections by customs officials and their power to do checks on companies operating in FTZs.

OECD

OECD's research reports on counterfeiting

The OECD has published several reports providing empirical evidence and offering estimates of the size and impact of counterfeiting activity globally. OECD's work focuses on modes of transport that are exploited to conduct illicit trade, sector specific studies and key hotspots that are vulnerable to criminal activity. These reports assist governments and policymakers to analyze key metrics and the related challenges and develop roadmaps to curb counterfeiting. Most notable to the current sectors under discussion are the reports on:

- Misuse of Small Parcels for Trade in Counterfeit Goods (published jointly with the EUIPO):[81] The report examines the misuse of small parcels for trade in counterfeit and pirated goods. It presents the legal and economic contexts of the operation of express and postal services. It also looks at the available data on volumes of small consignments, via postal and courier streams, in the context of seizures of counterfeit and pirated goods. The report notes that footwear, electronics, watches and apparel feature among the top goods being trafficked through small parcels.
- Misuse of Containerized Maritime Shipping in the Global Trade of Counterfeits (published jointly with the EUIPO):[82] The report provides empirical evidence about the misuse of container ships in international trade in counterfeits. It also suggests the main trade routes with containers polluted with illicit trade, outlines the economic landscape for containerized maritime transport and investigates policy gaps that enable its misuse. Reported data suggests that apparel (including footwear, clothes and accessories) and electronics good are among the highest trafficked through maritime shipping lanes.

- Global Trade in Fakes (published jointly with the EUIPO):[83] This report seeks to quantify the magnitude, value, scope and trends of global trade in counterfeits. It estimates the overall scale of this threat and outlines which industries are particularly at risk – this includes the sectors under discussion in this chapter.

OECD Recommendation of the Council on Countering Illicit Trade: Enhancing Transparency in Free Trade Zones

Improving information sharing between FTZ administrators and domestic authorities is an essential process in creating a more secure trading environment, primarily because such data is a pre-requisite for customs' ability to effectively fulfil their security mandate through targeted inspections and other risk-based procedures. The OECD's Recommendations is designed to ensure transparency in FTZs and is framed as part of the broader effort to counter illicit trade, including counterfeit trade. The Recommendation contains an "OECD Code of Conduct" that stresses the need to maintain updated digital records of all transactions and share this data with the competent national authority in a timely manner. The OECD is expected to establish a mechanism to monitor the performance and compliance with the Recommendation and related Code of Conduct.[84]

Universal Postal Union

Dangerous goods and Prohibited Campaign

The UPU has launched an awareness campaign on goods that cannot travel through postal networks – this includes a separate campaign on counterfeit merchandise. It informs consumers of the harms of counterfeit goods and to refrain from sending these in small parcels. The UPU has created flyers, videos and posters to raise awareness.[85]

European Union

Digital Services Act (DSA)

Adopted in 2022, DSA aims to better protect consumers online and promote greater accountability from online platforms. It extends to the online environment the same protections that consumers enjoy in brick-and-mortar store. Relevant measures to protect consumers from counterfeits include:[86]

- Platforms have mandatory procedures in place for removing illegal goods.
- Online marketplaces are requested to trace their traders ("know your business customer"). The aim is to ensure a safe, transparent and trustworthy environment for consumers and discourage traders who abuse platforms from selling unsafe or counterfeit goods.
- Online platforms are requested to organize their online interfaces in a way that allows traders to comply with their information obligations towards consumers.
- A new system of trusted flaggers is also available, e.g. for brand owners fighting counterfeit goods, and for faster and easier flagging and removal of counterfeit goods.
- Marketplaces shall implement reasonable efforts to randomly check whether products or services have been identified as being illegal in any official database and take the appropriate action.

- Very large online platforms, defined as **those having more than 45 million monthly active users in the EU** are subject to an audited risk assessment that will include an analysis of their vulnerability to being infiltrated by illegal goods. Annual audits of mitigation measures being taken will also be carried out.

5.2 Selected national responses

China' new e-commerce law

China's new e-commerce law, effective at the beginning of 2019, cracks down on the sales of fake products by increasing accountability of internet platforms and sellers. In particular, e-commerce platforms, individual and merchant sellers as well as social media platforms such as WeChat and Douyin, are held legally responsible if fake goods are sold and no measures were taken to prevent transactions. Platform operators also have to keep at least three years of product and service information records for each merchant. Lastly, the new law outlines a mechanism structure for notifying parties about fake listings and the process of removing the sales. Platform operators face fines of up to 2 million yuan, or nearly $300,000, for serious cases of intellectual property infringement where they fail to promptly remove listings.[87] The government is seeking to amend the law to enhance the penalties including revocation of licenses for those that fail to deal with IP violations by vendors on their platforms.

United States' s "Go for real" campaign

The US government is one of the leading countries in its efforts to combat counterfeiting both online and offline. The "Go For Real" campaign, in particular, aims to raise awareness of counterfeiting through social media, online advertising, interactive websites, radio ads and handouts. In addition, the government invests heavily in training and capacity building programs locally and in several countries of interest.

Recently, the government passed the INFORM Consumers Act, which will require e-commerce platforms to better vet and disclose information on their third-party sellers. Specifically, the Act directs online marketplaces to verify high-volume third-party sellers by authenticating the seller's government ID, tax ID, bank account information, and contact information. Further, online marketplaces will also need to supply a hotline to allow customers to report suspicious activity such as the posting of suspected stolen, counterfeit, or dangerous products.

United Kingdom

The UK IP Crime Group is an alliance of representatives from private sector, enforcement agencies and government departments who have a role in tackling IP crime and infringement in the UK. The Group meets every quarter to discuss current IP crime and infringement issues, trends, potential ways to work collaboratively and to share best practice. The Group seeks to strengthen IP enforcement and protection locally as well as in countries of interest for UK businesses. The Group also produces guidance on actions against counterfeiting. Its Supply Chain Toolkit Notably provides a step-by-step approach on action to be taken if counterfeits are found within the supply chain, and guidance on how to strengthen and protect IP assets.

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

Over the years, several private sector partnerships have been created to tackle counterfeiting. Increasingly, brand owners are working together to share intelligence to strengthen investigation and enforcement actions against criminals. Private sector associations also engage with intermediaries such as transporters and online platforms, often by signing MoUs, to commit to greater accountability and responsibility in tackling counterfeits in their supply chains. This section provides a selection of key initiatives.

IACC partnerships

The International Anti-Counterfeiting Coalition (IACC) has initiated several programs against online counterfeiting. Notably, the IACC MarketSafe is a partnership with the Alibaba Group. This program provides rights-holders with a streamlined mechanism for expedited take-down actions against infringing listings and sellers, complex issue resolution and special policies to address counterfeiters' evasive tactics, and the hands-on support of dedicated, Chinese-speaking analysts. It also facilitates dialogue between brands and Alibaba to strengthen preventative measures and address policy concerns. Similarly, IACC has recently established a partnership with Amazon that includes streamlined issue escalation and resolution and ways to enhance automatic protections.

Partnerships driven by the Philippines

The Intellectual Property Office of the Philippines (IPOPHL) has unique features that distinguish it from most other IP agencies worldwide. Firstly, it operates directly under the Office of the President, providing it with high level influence and reach. Secondly, IPOPHL has a unique enforcement mandate, allowing it to undertake enforcement functions including the authorization to coordinate raids and seizures of counterfeit goods with the Philippines National Police, the National Bureau of Investigation, the Bureau of Customs (BOC), and local government units.

IPOPHL plays a pivotal role in driving collaboration among government agencies and private sector stakeholders to bolster the protection of IPR rights in the country. In addition to developing and implementing policies, the agency takes an active approach to establishing new enforcement standards and advocating for amendments to the IP Code. For example,

- IPOPHL was instrumental in bringing forth the 2021 e-commerce Memorandum of Understanding (MOU) between e-commerce platforms, including Lazada and Shopee, and several global and local brand owners and business associations. In May 2023, in addition to the UK IP Office, the Pharmaceutical Security Institute (PSI) and INTA, eight more companies joined the MoU making it to a total of 27 signatories.[88]
- In April 2023, IPOPHL announced draft rules on voluntary site-blocking with local ISPs to be implemented later in the year. These new enforcement standards will empower the IP Enforcement Office (IEO) to order ISPs to block access to piracy websites that infringe copyright or facilitate copyright infringement online.

International Trademark Association's (INTA) Unreal Campaign

Several business associations have initiated consumer awareness campaigns on the harms of purchasing counterfeit goods on their health and safety, the society and the economy. Notably, International Trademark Association's (INTA) Unreal Campaign aims at educating those aged 14 to 23 about the importance of trademarks and brands and the dangers of purchasing counterfeit products.

Declaration of Intent to Prevent the Maritime Transport of Counterfeit Goods

Leaders from global shipping firms, freight forwarders, brand owners – whose products are counterfeited – and industry organizations, signed a joint "Declaration of Intent to Prevent the Maritime Transport of Counterfeit Goods". The non-binding Declaration acknowledges the "destructive impact" of counterfeits on international trade. It calls on the maritime transport industry to address it "through continuous proactive measures, and corporate social responsibility principles." The Declaration includes a zero-tolerance policy on counterfeiting, strict supply chain controls and other due diligence checks to stop business cooperation with those suspected of dealing in the counterfeit trade.

Partnerships against online counterfeiting

Several companies have entered into collective or bilateral partnerships with key online platforms to proactively monitor for counterfeits of their brands. Recently, In Southeast Asia, leading brands set up the Southeast Asia e-commerce Anti-counterfeiting (SeCA) Working Group, spearheaded by Lazada Group in partnership with companies including HP and BMW. Separately, in 2020 Amazon set up a Counterfeit Crimes Unit to help hold counterfeiters accountable through the courts and through law enforcement. The unit is made up of former federal prosecutors, former FBI agents, experienced investigators and data analysts to pursue targets around the globe and to support law enforcement efforts to bring to justice those attempting to sell counterfeits on their store. Similarly, Mercado Libre also launched the Anti-Counterfeiting Alliance that collaborated with brand owners to exchange information and eliminate counterfeits from its platform and raise awareness of the problem.

While these are all interesting initiatives, to be effective it is important that they are sustained by a genuine willingness by online platforms to mitigate the circulation of counterfeit goods through their trade channels.

6.2 Business driven technological solutions

The private sector has launched a number of technological solutions to combat illicit trade with the goal of increasing transparency and product traceability in the supply chain. Such solutions have predominantly been through trackers on products and through apps that allow brands to track their movement throughout the supply chain. Authentication solutions with the help of technology and artificial intelligence is increasing in sophistication and is introducing novel methods for brands to augment the integrity of their supply chains.

Some of these tools take advantage of a number of cutting-edge technological solutions and are examined below.

- **Blockchain:**
  - Brands including Christian Dior, Unilever and Coca-Cola are including blockchain to track their supply chains.[89] Blockchain gives the product a unique identifier, which allows for its tracing throughout its whole history, from raw material to the point of sale and eventually to secondhand markets (in the case of apparel goods). Tampering with a shipment gets logged on the blockchain and can easily be traced back to the originator. Brands and consumers thereby have access to digital proof of the product's authenticity. Smart tags are used by some companies to implement blockchain provenance identification. These are attached to products to identify the place of manufacture, track real-time location, and assign specific information at various stages. When a smart tag is attached to a product, data of every new transaction is sent to the blockchain along with the corresponding time stamp, rendering it immutable.[90]
  - INCOPRO assists companies in eliminating the sale of counterfeit goods sold on social media platforms through blockchain. For example, Instagram user posts are centered on "clusters", where one user post is linked to another user utilizing a unique identifier. Instagram users can watermark their pictures using a WeChat ID, and this WeChat ID might also be found in another users' "about me" listing. INCOPRO developed a solution which utilized a clustering method that links together different Instagram users and connects them to external sellers they may employ. Clustering is supposed to enable INCOPRO to determine who the counterfeiter is and remove any and all their accounts.
  - Radio frequency identification (RFID): Luxury brands such as Salvatore Ferragamo are using RFID in their bags and shoes for authentication. It allows customs enforcement agencies to scan the item and thereby identify it from fakes.
  - In addition to its Brand Registry program, in July 2019 Amazon announced the expansion of its Transparency program to Europe, India and Canada. This is an effort to provide a serialized code for items, which helps to authenticate every unit of a product line. To date, it is used by 4,000 brands in the United States.[91]
  - Bulla consists of integrating a secure near-field communication (NFC) chip in the target product as well as associating this chip with the company authentication server, BULLA-id. It is also described as a short-range wireless communication between electronic devices. The system through an android mobile app and a product management platform can verify the authentication of the brand. The NFC can be embedded into the products and contain electronically stored information that can be read by mobile devices. One of the benefits that the NFC provides is that they are quicker to read; hence, it is less time consuming and less laborious.[92]

- **Artificial Intelligence (AI):**
  - Image recognition through AI: While counterfeiters frequently steal and upload on rogue sites pictures from legitimate websites, they often make spelling/grammatical mistakes and fail to add details under product descriptions. Modern artificial intelligence technologies can search out and detect inconsistencies. Essentially, this technology works by examining images and descriptions of the original product listings of online retailers in addition to pricing and customer reviews.[93]
  - DataWeave is a company that developed AI technology with the capability of detecting counterfeit goods by tracking counterfeit products and developing company blacklists that online retailers like Amazon and Walmart.com can use to stop counterfeit products from being sold on their websites.[94]

7. Recommendations

The following are focused recommendations to help combat illicit trade in consumer, electronic and luxury goods by governments and private entities:

- **Step up efforts to tackle online counterfeiting.** Counterfeiters operate over a wide array of online channels such as B2B exchanges, auction sites, e-commerce sites and message boards. All of these need to be monitored and analyzed. A multi-pronged approach is thus needed on the basis of the following pillars:
  - **Monitor e-commerce platforms.** Reportedly, just ten online marketplaces account for fully 80 percent of all marketplace traffic.[95] Monitoring these marketplaces will ensure a majority of these volumes are kept in check.
  - **Responsibility of online marketplaces.** Online marketplaces should support and take proactive efforts to introduce more checks in their supply chain. Further, marketplaces should improve verification requirements of sellers to know who is trading on these platforms and publish such information. This should include physical addresses, bank details, contact information and other identity checks such as business license. Sellers should be made to sign an undertaking not to trade in counterfeit as part of their onboarding process.
  - **Watch for cybersquatters.** Brands should actively monitor cyberspace for unauthorized use of their branded terms in domain names. This would aid in rapid detection of e-commerce sites selling counterfeit or unauthorized goods.
  - **Channel online intelligence to inform offline defense measures.** Because offline measures such as physical investigations, factory raids and other activities can be costly and time-consuming, it is critical to know where these operations should be focused. Online intelligence can help identify the biggest infringers, so that offline defensive efforts can be prioritized accordingly.[96]
- **Cooperate with law enforcement.** Law enforcement play a crucial role in mitigating the trade in counterfeit goods. Customs play a critical role in ensuring that counterfeit goods are stopped at national borders and prevented from infiltrating legitimate channels of commerce, as the latter would be highly challenging to track, and seize. Police on the other hand play a crucial role in enforcing IPRs in locally.

- **Raise awareness and prioritize counterfeiting as a serious crime.** Educating law enforcement about the importance of their role in protecting IPRs and the impact of counterfeiting on the society and economy is crucial for better enforcement. Law enforcement must be made aware of the related harms on consumers' health and safety and consequently frame IPR violations as serious offences. Governments need to prioritize IPR protection and enforcement on the basis of a shift in mindsets whereby counterfeiting is no longer perceived as a victimless crime, but rather one that boosts organized criminal syndicates, often relies on forced labor and generates significant proceeds and connected money laundering operations.
- **Build product identification mechanisms.** In addition to awareness raising initiatives, law enforcement, and especially customs, need training to identifying counterfeits from genuine products. Customs are encouraged to participate in regular product identification trainings to understand how to spot a fake and how to report this to brand owners.
- **Use technology for anti-counterfeit efforts.** With tens of thousands of containers and small parcels being traded every day, law enforcement lacks the manpower to physically inspect such large volumes. As such, governments must invest in increasing technology support at import and export to allow risk management systems to pick up on suspect consignments. Brand owners are encouraged to share intelligence with law enforcement including known infringing sellers, repeat offenders, evasion tactics, red flags to allow law enforcement to effectively intercept counterfeit goods.
- **Ensure proper storage and destruction of counterfeit goods.** Suspect counterfeit goods that are under adjudication must be stored in proper facilities that cannot be infiltrated by counterfeiters such that the products go back into channels of commerce. Further, once the goods are confirmed to be counterfeit, they must be destroyed in an environmentally friendly manner, without the need for right holders to initiate court proceedings. The US government's model for storage and destruction and bearing the associated costs runs through the Treasury Forfeiture Fund. Confiscated proceeds of crime and specifically those related to counterfeiting provide funding support for national enforcement activities in relation to IP-infringing goods. Such a mechanism would send a clear message to criminal gangs that all assets will be seized following a proven IP crime.[97] Governments and industry actors need to ensure that issues relating to storage, disposal, and destruction of infringing goods are included in enforcement training programs. This will assist in developing robust organizational frameworks as well as provide the required technical knowledge and skills to efficiently deal with counterfeits at the border.
- **Monitor marketing and goods advertising.** While it is important to identify and shut down illegal distribution channels, those involved in the distribution of counterfeit goods are likely to regularly seek new sales venues. As a result, it is critical to monitor the online promotional activities the OCGs are launching. Counterfeiters would use the same effective promotion techniques employed by legitimate marketers, leveraging the existing market base built by the legitimate brands, including paid search advertising, links within social media, search engine optimization (SEO) tactics (i.e. improving website visibility through searches), cybersquatting and spam.

- **Take proactive action.** Once rights holders understand where the greatest threats lie as regards their brands, a proactive strategy should be implemented.
  - **Prioritize targets.** The biggest offenders should be identified and addressed first. Brand owners should determine which counterfeit goods are generating the largest sales, and target them first as well.
  - **Show determination.** Brand owners that visibly and consistently adopt and implement strategies to remove counterfeit goods from online venues, often see a drop in counterfeits of their products.[98]
  - **Collaborate within the industry.** Industry partnerships within sectors and multisectoral alliances can be powerful weapons in the fight against online counterfeiting. It is in the interest of brands to liaise with one another and technological companies to find common solutions for the problem of counterfeit goods within their industry. This will also be useful in brands exchange information on common modus operandi, repeat offenders, provenance economies and key counterfeit markets for them to feed into their investigation efforts. These collaborations would then make it possible to get counterfeit sites shut down more quickly, thereby minimizing brand owner losses. IACC, ACG, the American Apparel and Footwear Association (AAFA) and TRACIT also provide resources and advice on best practices for fighting counterfeiters.[99]
- **Educating end customers.** Customers can be an important ally in minimizing sales of counterfeit goods. This should start with:
  - **Awareness on risks.** Educating customers about the risks of buying from unauthorized sources, and encouraging them to report suspicious goods and sellers, contributes to mitigating the counterfeit trade and building brand integrity and loyalty.
  - **Inform consumers of available tools.** Consumers should also be informed about the tools available to them to verify the authenticity of a product. Many brand owners have established web-based tools for verifying the authenticity and/or the legitimacy of sellers. Others provide forms or email-based mechanisms for reporting suspected infringement. When offering such tools, rights holders should ensure the public appreciates the benefits of buying authentic goods from authorized sellers.
  - **Appeal to the sentiment attached to the brand quality and value.** Especially with electronic and luxury goods, consumers would not want the value of their goods reduced by the presence of illicit goods on the market. Customers buy products of a particular brand because they have come to expect a certain quality standard of products associated with that brand. Taking advantage of this sentiment, customers should be encouraged to report suspicious listings to the respective brands or law enforcement. Brands could also reach out to the customer base on counterfeit awareness campaigns, circulating newsletters on counterfeit trends and how to recognize it.[100]

- **Policy and legislative actions.** For governments to effectively tackle the problem of counterfeits, a strong IPR policy backed by a sound legislation is critical. A national IPR policy would permit governments to interlink agencies that are responsible for IPR protection and enforcement and to create a harmonized approach to the problem. In addition, governments must also ensure a strong legislative and judicial system that prioritizes the protection of IPRs. While this list could be extensive, below are some of the key recommendations:
    - **Introduce a national IPR policy.** Governments can design a comprehensive national IP Strategy that identifies required legal and policy reforms, outlines implementation and enforcement responsibilities and allocates sufficient resources to ensure effective enforcement.
    - **Ratify international conventions.** Effective and proper implementation of existing conventions such as the United Nations Convention against Transnational Organized Crime which calls for international cooperation and adoption of measures such as the establishment of domestic criminal offences, frameworks for extradition, mutual legal assistance and law enforcement cooperation. Within the Convention's framework, governments can also adopt tougher laws in order to tackle the illicit trafficking of counterfeit goods, particularly in the case of public health and safety threats.[101] Other conventions that pertain to IPRs include: Paris Convention for the Protection of Industrial Property; Madrid Agreement concerning the International Registration of Marks and the related Protocol; Rome Convention for the Protection of Performers, Producers of Phonograms and Broadcasting Organizations;
    - **Improve and expedite civil judicial enforcement procedures.** Courts are encouraged to speed up the trial process and issue preliminary court injunctions in a timely and effective manner. The effect of civil administrative penalties and civil remedies must also be sufficient to act as a deterrent. Courts must also introduce obligations on infringers to provide information on the source of the counterfeit goods.
    - **Increase criminal sanctions.** An effective way to deter counterfeiting is to impose higher criminal sanctions and ensure that offenders, when they are convicted to prison terms, serve their sentences.
    - **Take strong action against online counterfeiting.** Governments are encouraged to implement policies that require e-commerce platforms to strengthen their due diligence process for sellers and strong action against repeat offenders. Further, strong penalties must be introduced against notorious sites whose business models are based on providing access to infringing content. Governments must also ensure that law enforcement agencies and rights holders can obtain information that allows them to identify owners of websites that are suspected of targeting pirated or counterfeit goods.
    - **Strengthen money laundering legislation.** It is established that the illicit trafficking of counterfeit goods and money laundering are intrinsically linked. Therefore, it is of utmost importance to have national laws to counter all forms of money laundering.

- **Implement proceeds of crime regulations to IP crimes.** Governments are encouraged to include legal framework for implementation of asset tracing, freezing and confiscation of proceeds of crime. Thereafter such proceeds can be used for furthering IPR enforcement.
- **Regulation of FTZs.** FTZs, such as Jebel Ali in the UAE, frequently feature among the list of transit points. While imports of counterfeit goods are, in most cases, targeted by local enforcement authorities, goods in transit are not within their scope, which means they are less likely to be intercepted. Customs could impose stricter inspection and monitoring of goods in and out of these FTZs collaborating and exchanging information with other territories to combat the trade in counterfeits within these zones.[102]
- **Capacity building.** There is a need for coordinated training among law enforcement across the world to help streamline approaches. For example, the 'International IP Crime Investigators College' (IIPCIC) by INTERPOL is aimed at law enforcement, regulatory authorities and private sector IP crime investigators. INTERPOL supports online courses that aim at better equipping them to intercept counterfeit trades.[103] Further, the WCO also supports national and regional capacity building program for Customs to raise awareness of counterfeit goods and to educate on how to identify counterfeit goods.

NOTES

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V. FORESTRY PRODUCTS

1. Overview and findings

Illegal logging and illicit timber trade dynamics

What is illegal logging and illicit timber trade?

Taking into account that the term "illegal logging and illicit timber trade" are understood differently from country to country, the following elements are common across most definitions used:

Forest operations

- violating national laws in the country of origin
- violating ratified international treaties and conventions

For example, the International Union of Forest Research Organizations (IUFRO) defines illegal logging and related timber trade as being "all practices related to the harvesting, processing and trading of timber inconsistent with national and sub-national law." Practices include operating under a license that has been obtained illegally, e.g. involving corruption or collusion, logging in protected areas, exceeding permitted harvest quotas, processing logs without the necessary licenses, tax evasion and exporting products without paying export duties. The IUFRO definition also encompasses "related trade" when timber-based products are exported or imported in contravention to import or export laws or when illegal timber products are exported or imported.

There are many causes of illegal logging. Economics play an important role, as illegal timber is usually cheaper than legal timber, which makes it difficult for legal operators to compete on the market. Use of illegally logged timber reduces the production costs and ultimately the costs of the finished product, thus creating an advantage for operators who do not adhere to laws and industry regulations.

The presence of illegal timber in the market directly impacts legal operators by exerting negative pressure on the prices for timber and forest products. A 2004 study by Seneca Creek Associates and Wood Resources International estimated that illegal forestry products were depressing world prices by between 7% and 16% on average, and U.S. prices by 2% - 4%, depending on the product.[1/2] This in turn undermines the economic viability of investments required for responsible forest management and forest products consumption.

While weaknesses in forest governance in producer countries are typically the direct cause, consumer countries contribute to these problems by importing illegally sourced timber and timber products.

Demand from wealthier consumer countries can also have a negative impact on domestic consumption patterns in source countries. Higher profit margins from exporting timber can create a vacuum in the domestic market of producer countries. When the domestic needs for timber are not met because most of the legal timber is going abroad, this can create incentives for illegal activity. According to interviewed sources, for example, in the Democratic Republic of the Congo (DRC) the majority of legal timber is exported, primarily to China. Yet, there are some 80 million people in DRC that need material for houses, furniture, wood burning, etc. The result is a parallel informal and illegal industry that feeds the domestic market.

Case study: Guatemala's Rosewood racket[3]

The emergence of Guatemala's illegal rosewood trade has been driven largely by demand among China's nouveau riche for traditional Ming and Qing dynasty-style rosewood furniture. Between 2009 and 2014, customs data analyzed by the Environmental Investigation Agency, a U.K.-based nonprofit, show a 14-fold increase in rosewood imports to China from around the world. This expansion coincided with (and contributed to) the decimation of preferred Southeast Asian rosewoods, which earlier had replaced depleted native rosewoods in southern China. Buyers searched for new sources, and Guatemala, which has at least four commercially desirable species, was one.

2. *Modus operandi*

2.1 Supply chain modalities

The production and trade of illegal wood-based products involves a wide range of actors and enterprises along the supply chain from source forests to consumer markets. Small-scale loggers, national and multinational logging and wood-processing enterprises, brokers with related white-collar agents, and shipping companies play different roles in the illegal production and trade, often through their licit commercial activities.[4]

Illegal logging and illicit trade in timber takes four primary forms:[5]

1. The illegal exploitation of high- value endangered (CITES listed) wood species, including rose-wood and mahogany;
2. Illegal logging of timber for sawn wood, building material and furniture;
3. Illegal logging and laundering of wood through plantation and agricultural front companies to supply pulp for the paper industry; and
4. Utilization of the vastly unregulated wood fuel and charcoal trade to conceal illegal logging in and outside protected areas, conduct extensive tax evasion and fraud, and supply fuel through the informal sector.

Traffickers exploit opportunities to shift illegal timber to "legal" where most profit can be made, especially if illegal timber can be made ready for legal export and circumvent national legislations aimed at prohibiting both the import and processing of illegally logged timber and timber products. Illegal logging and illicit trade in timber therefore differs significantly from some other forms of illicit trade, as consumers remain largely unaware of the illegal origins of what they are buying, especially if illegal timber can be made ready for legal export and circumvent national legislations aimed at prohibiting both the import and processing of illegally logged timber and timber products.

2.2 Transport Dynamics

The very nature of timber, including itssize, density, and geographical origins, means that most wood is transported from source country to destination country by container shipping.

Examples of tactics used by criminals to evade controls and obfuscate cargo origin include use of switched Bills of Lading (B/L), forged Certificates of Origin, undeclared port stops, and undeclared switching of cargo between vessels at sea.[6] Some interviewees suggested that China's Belt and Road Initiative may make trains more important in the future, however trains currently play a more limited role in the timber transport.

Interviewees noted that most of the illegally harvested wood is 'cleaned' domestically, so before crossing any national borders, with trucks and log yards serving as two vulnerable places for illicit activity. "It's easy to 'play with the papers' on the roadside. Just stop and add a few illegally logged roundwood to the truck and then when it gets to the log yard it's delivered as 'clean'."

2.3 Hotspots

2.3.1 Free Trade Zones

'Cleaned' illegal timber and illicit wood-based products often flow through the same distribution channels as the licit trade, along the same highways to the same seaports, often by the same transportation agents, and sometimes mixed with licit timber. Given their role as major global trading hubs, free trade zones can act as consolidation hubs for illegal and legal forest products.[7]

Free trade ports in Singapore, Hong Kong, Malaysia and China are frequently listed as significant trans-shipment points for illegal timber on the Africa-Asia trade route:

- The proximity of Hong Kong's freeport to end consumer markets in China has been identified as a key vulnerability for illegal timber trade, as well as ivory trafficking and abalone harvested in South Africa.[8]
- Port Johor in Malaysia and Port of Singapore act as key transit or transshipment points for illegal wildlife commodities and illegal timber destined for China and Vietnam.[9]
- Guangdong Province has featured in several Environmental Investigation Agency (EIA) investigations in the past decade. In 2017, EIA's report The Rosewood Racket demonstrated how Guangzhou Port was one of the two most common destination ports for illegally traded kosso logs from Nigeria and highlighted the districts of Xinhui and Zhongshan as two of the three main processing centres for rosewood in China. Guangdong Province has also featured as a major destination for illegally traded Burmese teak in EIA investigations in Myanmar.
- In Singapore, almost 30,000 logs of internationally protected rosewood were seized in Jurong Port en route from Madagascar to Hong Kong in 2014. This case illustrates the significant challenges with enforcing international laws against illegal timber transiting through free trade zones. If inspections at the origin are not duly conducted, a Free Trade Zone can become an unknowing facilitator of illicit timber trade. In such cases, the burden to interdict the illegitimate movement of such wood products will fall almost exclusively on the authorities in the destination country (see box).

Case Study: Free Trade Zone of Jurong Port (Singapore)

In 2014 Singapore authorities seized nearly 30,000 rosewood logs in the Free Trade Zone of Jurong Port. It was one of the largest wildlife seizures in the history of the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

The defendants presented no CITES documentation at the time of the logs' seizure, but later produced documents from Madagascar that ostensibly showed the export to be legal.

The authenticity of the documents was initially confirmed by Madagascar's Environment Minister at the time, despite a CITES ban of the export of Malagasy rosewood (Dalbergia spp.) and ebony (Diospyros spp.) since 2013 and Madagascar law banning exports of rosewood since 2010. However, Malagasy officials reversed their position nearly two years later, sending documents to Singapore claiming that the 2014 rosewood shipment was indeed illegal.

Faced with uncertainty over the legality of the export from Madagascar, the Singapore courts focused on the legality of the import of the wood into Singapore, a CITES signatory.

The case hinged on whether the wood had in fact been "imported" into Singapore or was merely "in transit" to Hong Kong. Although import to Hong Kong would also have been illegal, this had no bearing on Singapore law.

In 2015, a Singapore trial court found the defendants not guilty, ruling that the wood was in transit. In 2017, the ruling was reversed on the grounds that no firm plan had been made to transport the wood to Hong Kong. But in a final reversal in 2019, the Court of Appeal ruled that the wood was in transit, citing evidence that the defendant had already tentatively booked transport to Hong Kong for about one-fifth of the 30,000 logs. As a result, the court ordered the wood to be released from custody and returned to the defendant.

The fate of the wood remains uncertain, as without any legal CITES documents from Madagascar, almost every country in the world will treat its import as contraband. The CITES secretariat even issued a call on signatories to the treaty to be on the alert and take action if the contraband found its way to their shores. Nonetheless, international observers expect that the wood will be divided up, perhaps through transshipment on the open seas, and ultimately find its way onto the black market.

2.3.3 Postal systems/ express couriers

Due to the nature, size and volume of illicit timber, the use of postal systems and express couriers to transport these goods is unlikely. No information has been identified suggesting that postal systems and express couriers play a role in the illicit timber trade.

2.3.3 Online platforms

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3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

There is robust evidence of the involvement of organized criminal networks in large scale illegal logging.[10] In the past decade, CITES, INTERPOL, UNODC and UNEP (UN Environment Programme) have warned against the rise of organized transnational environmental crime. More sophisticated ways to conduct illegal extraction of resources along with more advanced laundering methods of both illegally extracted resources and the proceeds from the illegal trade have been observed.

Paper and pulp are particularly interesting products from a transnational organized crime perspective because once it has been processed it is very difficult and expensive to determine its illicit origins, in contrast to roundwood where species and origins can more easily be identified. The wood used to produce paper and pulp is often mostly or partly declared falsely as plantation wood to launder its origins. These methods effectively bypass many current international efforts, such as the Lacey Act and the EU FLEGT programme.

A 2014 report by UNEP and Interpol estimated that 62–86% of all suspected illegal tropical wood entering the EU and US arrives in the form of paper, pulp or wood chips, not as roundwood, sawnwood or furniture products.[11]

There is also evidence of criminal logging networks being involved in other illegal activities. This convergence is exemplified by instances where illegal timber and wildlife are trafficked along shared routes by the same individuals.[12] For example, an INTERPOL-coordinated operation across Africa in 2013 resulted in 240 kg of elephant ivory and 856 timber logs seized and 660 arrests. Also seized were 20 kg of rhino horns, 302 bags of charcoal, 637 firearms, nearly 2,000 rounds of ammunition, 30 chainsaws, 200 kilos of cannabis and khat, 65 pellets of heroin, 47 animal parts and 44 vehicles.[13]

In Africa and Asia, there is a significant convergence between illegal wildlife and illegal timber 'hotspots', transportation routes, processing hubs and key ports. Traders within Africa and Asia trade in both illegal wildlife and illegal timber products, with shipments of illegal wildlife products sent within shipments of legal timber, as well as within shipments of illegal timber. For example, The UNODC-WCO Container Control Programme (CCP) seized in January 2014 two containers in Lome, Togo, which contained 3.8 tonnes of ivory and 266 teak logs.[14]

3.2 Corruption

To move sufficient volumes of illegal timber, corruption and fraudulent documentation is almost always part of the process.[15] Once cleaned of their illicit origin, these goods move easily within the formal trade. Given the limited infrastructure in many supplier countries, movement is likely to take place through the same channels as the licit trade, along the same highways to the same seaports, often by the same transportation agents, and sometimes mixed with licit timber.

The forestry sector is often closely linked to the government, with global forest ownership and forest management largely dominated by government ownership. Governments in countries with large amounts of forest have traditionally chosen to transfer access rights and

management authority to large-scale private forest industry through logging concessions. These concessions usually provide companies with long-term rights to access, manage the land and harvest timber. In return, they pay royalties and other fees to the government.

Given that governments own and administer the vast majority of the world's forests, there are significant incentives and opportunities for corruption and manipulation of the public forestry administration. Government officials, including CITES Management Authorities, are also able to make illegal timber look legal with a single piece of documentation, leading to cases of abuse involving corrupt practices.[16] As one interviewee put it, "The primary weakness in this sector is widespread corruption and the associated creation of false legal documents. Corruption is present at all levels of government. From the top to the bottom. The police, the army, politicians, log yards. When police at the bottom have 'shitty salaries', they are going to do whatever they can to get a better life. Everyone is going to take as much as they can. In some countries you have army positions that are basically there just to make a little money from this activity. It's just how business is done, that level of general corruption and weak governance."

A 2016 UNEP and INTERPOL report noted that although 50-90% of the timber from some tropical countries are from illegal sources, "most illegally sourced and traded wood is either not considered or recognized as contraband by customs, or falsely declared as legally sourced and traded."[17]

Case Study: Cyberjustice for the Amazon: hackers tackle illegal timber head-on[18]

500,000 cubic metres of illegal Amazonian timber was given a legal appearance by hackers who had broken into the digital governmental timber control system in Brazil. A local newspaper in the Amazonian harbour city of Santarem - regionally known as an (export) hub for illegal timber- described the quantity of "legalized" timber as so large that some 14,000 trucks would have been necessary for its transport.

A crucial phase in the illegal trade in forestry products is thus to give the timber a legal appearance, with illegal facilitators and intermediaries shifting goods between the illegal and the legal worlds. Examples include forgers of logging permits and timber certification, as well as computer hackers who can facilitate "legalizing" quantities of illegal timber. Corruption is also a common feature when forest certification programs are circumvented.

Interpol estimates the annual global cost of corruption in the forestry sector to be in the order of USD 29 billion, with evidence of criminal networks using corruption and the bribery of officials to establish "safe passage" for the illegal movement of timber. Those criminal groups also exploit these same routes to transport other illicit goods, such as drugs and firearms.[19]

Primary methods include falsification of logging permits, bribes to obtain logging permits (in some instances noted as USD 20–50,000 per permit), logging beyond concessions, hacking government websites to obtain transport permits for higher volumes or transport, laundering illegal timber by establishing roads, ranches, palm oil or forest plantations and mixing with legal timber during transport or in mills. Funneling large volumes of illegal timber through legal plantations, across borders or through mills, is another effective way to launder logs.

In some instances, illegal loggers mix illicit timber with 3–30 times the amount of officially processed timber, which also constitutes tax fraud. Many of these illegal operations involve bribes to forest officials, police and military, and even royalties to local village heads.[20]

The exportation phase involves a range of illegal activities including transportation of logs without authorization, exportation of illegally obtained timber, illegal exportation of protected species, misclassification of exports and exportation with fraudulent documents, excessive exportation and declaring of lower values and volumes, clandestine exportation and exportation without permit, and illegally obtaining export permits. As one industry expert noted, "Falsifying papers is relatively easy if you know what you are doing. Unless the person has done a bad job [of forging the documents], it becomes very difficult for Customs to detect its illicit origins when the product arrives in the destination market. For this reason, traceability becomes very important."

Multiple reports detail how timber traffickers exploit corrupt customs officials to move their shipments from ports and across borders.[21] Enterprises or brokers may also falsely declare products as "certified" or in line with technical standards. Large-scale corruption is therefore the glue that binds the legal and the illegal trade closer together.

When shipments containing illegitimate wood products are received from the origin country with fraudulent documentation, ports authorities in the transit country often have little incentive to inspect the shipment if the container is only in transit. In such cases, the burden to interdict the illegitimate shipment is effectively transferred to the destination country.[22]

Corruption is present at all stages in the lumber production chain:[23]

- Bribes and political influence may be used either to facilitate logging without appropriate permits or to gain access to forests through questionable land concessions
- Enforcement officials are bribed to turn a blind eye to trucks carrying logs
- Corrupt transactions may similarly occur in order to process and trade the logs once they have been harvested, in a form of 'timber laundering' similar to money laundering
- Timber certifiers can be paid off to «whitewash» illegally sourced logs
- When violations are found, judicial corruption may prevent prosecution and accountability, leaving citizens without legal recourse
- Financial transactions also can be corrupted as a way to hide paper trails of sales and to keep the timber trade flowing.

3.3 Forced Labor

There are several examples of forced labor being used in legal and illegal logging. Forced labor may include threats, violence, poor living and working conditions, a lack of formal contracts, and non-payment of wages. It also may occur in sawmills, where workers may have to work excessive and unpaid overtime while having their documents retained and movement restricted.

The US Department of State's 2019 Trafficking in Persons Report reports that forestry workers, and in particular migrant workers, in the Czech Republic and Estonia have been subjected to forced labor, often by being compelled to work to pay off debt to their

employers.[24] The US Department of Labor lists Cambodia, Vietnam, Peru, North Korea, and two of the largest timber-producing countries globally – Brazil and Russia – as countries in which timber may be produced with child or forced labor.[25] While these reports do not make a distinction on whether forced labor occurs in the legal or illegal forestry sector, it is reasonable to believe that unregulated and clandestine illegal logging activity is more prone to the use of forced labor. By some estimates, up to 50% of illegal logging globally is dependent on forced labor.

3.4 Money Laundering

Illegal logging is estimated to contribute to approximately 15 to 30 percent of the global timber trade, generating billions of dollars in revenue annually.[27] In response to this issue, the European Union (EU), the World Bank, and other stakeholders have called for more effective use of anti-money laundering procedures as a way of tackling the illicit financial flows that support illegal logging.[28] Nevertheless, even though research indicates that anti-money laundering strategies could potentially play a crucial role in addressing illegal logging and the illicit timber trade, various challenges arise. Specifically, Financial Intelligence Units (FIUs) responsible for anti-money laundering cases confront resource shortages and prioritize alternative criminal cases over those involving illegal logging. Additionally, FIUs display hesitancy in probing foreign anti-money laundering incidents without external prompts and detecting illegal logging via cash flows is complex due to its similarities with legal transactions.[29]

Traffickers employ a range of tactics, including bribing officials and intricate instances of fraud and tax evasion. To obfuscate the illicit proceeds of illegal logging or bribes received in relation to illegal logging, illicit actors may also engage in money laundering. According to the forestry-NGO FERN, instances of money laundering specifically within the forestry sector encompass:[30]

- The introduction of cash obtained from illegal logging into local banking institutions.
- The diversion of payments for illegal timber to overseas accounts.
- The integration of funds from illegal logging into financial institutions, subsequently invested in various assets such as equities, bonds, and properties.

Case study: Timber, Crime, and Money: The Dark Underbelly of Malaysia's Forests[31]

In 2012, NGOs revealed that Chief Minister Abdul Taib was connected to a network of companies involved in illicit logging in Sarawak, Malaysia. Taib orchestrated an intricate scheme encompassing transfer pricing tactics and an elaborate network of shell companies to effectively launder the gains. These illicitly acquired funds were then channelled into the acquisition of properties spanning the United States and Canada. In 2014, Taib stepped down as Chief Minister due to this. Further investigations by NGOs have illuminated the intricate route taken by the funds, involving major banks, pension funds, and real estate groups.

4. Impact on the UN Sustainable Development Goals

Illegal logging has both direct and indirect adverse effects on the SDGs. Below is a brief overview on how these might be affected.

- **SDG 1.** *No poverty.* Illegal logging jeopardizes the vital contribution of forest products as an anchor for economic development, employment and tax revenues that could be used for public investment. The disruption caused by illegal logging not only robs household income of local families, amounting to more than 20 percent in developing countries communities, but also obstructs progress towards alleviating poverty and promoting well-being in forest-dependent regions.
- **SDG 8.** *Decent work and economic growth.* Illegal logging undermines sustainable economic growth, full and productive employment, and decent work for all, as it displaces legal and reliable employment opportunities in small- and medium- forest enterprises (SMFEs) in developing countries, while unsustainable forest practices leave large areas deforested, barren and unable to renew harvests for decades. Illegal logging and illicit timber trade also threaten jobs within the tourism industry, valued at 5 to 10 percent of national economies, when protected forests and animal habitats are damaged.
- **SDG 11.** *Sustainable cities and communities.* Illegal logging represents a significant threat to SDG Target 11.4 (protect and safeguard the world's cultural and natural heritage) when it occurs in ecologically sensitive areas and protected forest landscapes, such as precious rainforests and other World Heritage sites. These areas often harbor unique and diverse ecosystems, endangered species, and culturally significant sites that contribute to the overall biodiversity and heritage of our planet.
- **SDG 12.** *Responsible production and consumption.* The infiltration of illegally sourced timber into the legal wood trade deprives consumers of essential information needed to make informed choices aligned with sustainable development principles, including consumption of rare woods and woods sourced unsustainably. This issue directly undermines the achievement of SDG Targets 12.2 (sustainable management and efficient use of natural resources) and 12.8, which aims to ensure that the public has access to relevant information and heightened awareness regarding sustainable development practices in harmony with nature.
- **SDG 13.** *Climate Action.* Deforestation and forest degradation – often driven by illegal logging and the clandestine profits from illicit timber trade – disrupt and undermine nations' efforts to address climate change and sustainable forest governance. These practices exacerbate deforestation and forest degradation, accelerate contributions to CO2 emissions and precludes massive CO2 absorption critical to fighting climate change.
- **SDG 15.** *Life on Land.* Illegal logging undermines sustainable management of forests to preserve soil, minimize erosion, purify water, protect aquifers, improve air quality, preserve biodiversity and protect wildlife habitats.
- **SDG 16.** *Peace, justice, and strong institutions.* Illegal logging and organized forest crime generate billions in illicit profits for criminals, who are also involved in money laundering, tax fraud and tax evasion, and other forms of trafficking.

5. Institutional framework

There is, at present, no single universal international instrument designed specifically to prevent and suppress the illicit trade in timber and timber products. Complicating matters, timber illegally harvested in one country may be legal to import into another, as countries are not bound to enforce the forestry laws of other countries. The existing mechanisms under international law relevant to the illicit timber trade are, for the most part, agreements designed for protecting the environment and the sustainable use of natural resources.

5.1 International policy, regulatory and law enforcement responses

The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

The Advisory Committee on Enforcement (ACE)

CITES is the principal international instrument to control and regulate the international trade in protected species and to suppress any illicit dealings in wild fauna and flora. CITES is the single most important instrument dealing with the illicit trade in illegal timber under existing international law because it is the only convention that requires State Parties to criminalize the illicit trade in protected species and that enables importing countries to seize illegally sourced flora, including timber and timber products. Each CITES Party designates one or more CITES Management Authorities (MAs) in charge of administering certificates and permits used to authorize different types of trade in CITES specimens. CITES entered into force on 1 July 1975 and currently has 183 signatories around the world. Based on the degree of protection needed, species covered by CITES are listed in three appendices:

- Appendix I - species threatened with extinction; trade is permitted but under very restricted circumstances.
- Appendix II - trade of these species is controlled and regulated to ensure their survival.
- Appendix III - species subject to special management within a country. This includes species protected in at least one country which has asked other CITES member states for help in controlling the trade.

EU Timber Regulation (EUTR)

The EU Timber Regulation (EUTR) entered into force on 3 March 2013. Under the EUTR, EU operators are prohibited from placing illegally harvested timber and timber products on the EU market. Operators must exercise due diligence to reduce the risk of illegal timber being present in their supply chains. The EUTR also requires that traders who buy or sell timber and timber products already on the market maintain records about their suppliers and customers.[32]

The EUTR forms one of two key elements of the EU's Forest Law Enforcement, Governance and Trade (FLEGT) Action Plan, together with the Voluntary Partnership Agreements (VPAs) negotiated with producer countries.

The EUTR allows for operators to develop their own due diligence system or to use a system developed by a monitoring organization. Member states are responsible for designating a competent authority, ensuring it is sufficiently resourced and establishing the penalties that apply in cases of non-compliance. Under the EUTR, any timber or timber product which carries a FLEGT license or a CITES permit is considered to be legal.

Voluntary Partnership Agreements (VPAs)

Voluntary Partnership Agreements (VPAs) are one of the key elements of the EU's FLEGT Action Plan. A VPA is a legally binding agreement between the EU and a timber exporting country which aims to ensure that only legally harvested timber and timber products are imported into the EU from the partner country. At the heart of each VPA is a timber legality assurance system, which verifies that timber products are produced, transported, transformed and sold in conformity with national laws and hence meet the demand-side requirements of the EU Timber Regulation. The agreements also help timber-exporting countries stop illegal logging by improving regulation and governance of the forest sector.

To date Indonesia it is the only partner country to have issued FLEGT licenses to accompany its timber exports, its timber legality assurance system having been judged adequate by both parties to the VPA. In general, national legality assurance systems have proved to be more complex and difficult to establish than originally anticipated.[33]

5.2 Selected national responses

An important measure in preventing illegal logging and the trade in illegal timber is to reduce the market for illegal timber. A number of consumer countries, Australia, the EU, Republic of South Korea,[34] Japan,[35] USA, and recently China have introduced legislation which prohibits such imports.

Australian Illegal Logging Prohibition Act

The Australian Illegal Logging Prohibition Act came into effect on 29 November 2012 and prohibits both the import and processing of illegally logged timber and timber products. Under the Act, companies importing timber and timber products into Australia and processors of domestically produced logs are required to carry out due diligence to minimize the risk of illegally logged timber being present in their supply chains.[36] Importers also need to make a customs declaration about their compliance with the due diligence requirements businesses must undertake to minimize the risk that the wood or wood-fiber has been illegally logged.

The Act makes it a criminal offense to "intentionally, knowingly or recklessly import illegally logged timber or timber products into Australia or to process domestically grown raw logs that have been illegally logged in Australia." The Act establishes comprehensive monitoring and investigation powers, and sets out penalties for Australian businesses that do not comply with the Act.

The Act defines illegally logging as 'the harvesting of timber in contravention of the laws of the country where the timber is harvested'. This includes a wide range of illegal activities, such as:

- logging of protected species
- logging in protected areas
- logging with fake or illegal permits
- using illegal harvest methods

US Lacey Act

The US Congress introduced amendments to the Lacey Act in 2008 prohibiting the import and trade of illegally sourced timber and timber products. The Act, introduced in 1900, already prohibited the import and handling of illegally sourced fish and wildlife. While timber derived from plant species indigenous to the US was covered by the Act before the 2008 amendments, the majority of internationally traded timber was not subject to its restrictions. Under the amendments nearly all timber and timber products are now covered.

The amendments make it unlawful to "import, export, transport, sell, receive, acquire, or purchase in interstate or foreign commerce" any plant that was "taken, possessed, transported, or sold in violation of any law or regulation of any State". The applicable legislation encompasses the harvest of plants, payment of taxes and fees, and their export. An import declaration requirement was also introduced, under which the scientific name, value, quantity and country of origin of the timber imported must be stated, although there are some exceptions. The Lacey Act does not include a requirement for due diligence; however, this is explicitly encouraged since the exercise of "due care" can be used as part of the defense in cases of infringement of this law. There have been a number of enforcement actions under the Lacey Act since 2008, most notably against Gibson Guitars, between 2009 and 2012,[37] and Lumber Liquidators, in 2015.[38]

China's Forest Law

On December 28, 2019, Chinese legislators revised the country's Forest Law to ban purchase, manufacture or transport of timber which is known to originate from illegal logging sources. The revision, which came into effect on 1 July 2020, for the first time provides a legal basis for tackling the illegal timber trade. Article 65 of the revised law now reads, "Any timber operating or processing enterprise shall keep a standing book for entry and exit of raw materials and products of woods. No organization or individual may purchase, process, and transport woods in full awareness of their illegal origins such as illegal felling or wanton deforestation."[39] The law thus regulates the manufacturers of timber products who are required to establish a book-keeping system of their input material and output product. This includes name of the raw materials, variety, specification, unit price, source of raw materials, supplier information, tracking number and quantity of products shipping and receiving, purchaser information.[40]

6. *Business initiatives and public-private partnerships*

6.1 Steps, initiatives and measures

A wide range of mechanisms has been developed by the private sector, non-governmental organizations and governments to verify the legality of timber products.[41] Verification generally refers to activities undertaken by a variety of agencies (public sector, NGO and private sector, often in combination) on behalf of the state, to review and assess that timber or timber products have been harvested in compliance with the relevant laws. Verification involves independent audits of forest management units and processing facilities, including field inspections and reviews of management systems and documents, ensuring traceability of legal timber at all points in the supply chain.

There are many examples of voluntary private legality verification schemes.[42/43] While some schemes verify that timber originates from a licensed source and from a producer who has the legal right to harvest (verified legal origin), others also verify that timber harvesting and other management activities in the forest complied with the law (verified legally compliant). Companies wishing to prove that they have good supply chain management may also apply for chain-of-custody certification, thereby verifying that their timber products are traceable from the point of harvest to the point of supply.[44]

Case study: Transparency in Timber: The SVLK System in Indonesia[45]

Indonesia's timber legality assurance system or the SVLK (Sistem Verifikasi Legalitas Kayu) was developed to ensure sustainability of Indonesia's forests by promoting legal trade of timber. This system was developed since 2001 through multi-stakeholders consultations involving civil society, the government and the private sector.

The SVLK provides incentives for legality and sustainability by promoting market access for verified legal products and blocking market access for illegal products. The SVLK also promotes broader governance reforms, such as improved information, transparency, capacity, and community rights. Under the SVLK, Indonesian timber is deemed legal when its origin, production, processing, transport and trade are verified as meeting all applicable Indonesian laws and regulations.

The system is accompanied by an online database called SILK (Sistem Informasi Legalitas Kayu) or the Timber Legality Information System, that serves as a registry of V-legal documents. SILK links automatically with information systems in the Indonesian Ministry of Trade and the Customs Office of The Ministry of Finance.

Competent authorities in target export markets can access SILK to verify V-legal documents and seek clarification if necessary. The platform will also be used to publish and monitor cases of non-compliance by private sector actors. Work is progressing to upload the available information on non-compliance cases and develop procedures for nongovernmental groups to directly provide information to Indonesia's Ministry of Environment and Forestry for inclusion in the database.

Sustainability certification

In addition to verifying the legality of their products, some companies may also choose to certify their sustainability. Whereas legality verification offers evidence of the legal origin of timber and timber products, sustainability certification goes further in proving that these products originate from forests which are responsibly managed. To achieve certification, forest managers and timber suppliers have to comply with certain performance standards which may cover reforestation requirements, the protection of community and indigenous land rights, health and safety standards, and labor rights at the point of harvest.[46]

While many private certification mechanisms exist, there are currently two schemes that operate at a global level:

- **The Forest Stewardship Council (FSC)**[47] is a global certification system that enables specifiers to identify and purchase wood from well-managed forests. It defines ten principles of responsible forest management for a manager or owner to follow. As a benchmark, any FSC standard has to be 'interpreted' at the national level in order for it to be implemented within local forests forest.

- **The Program for the Endorsement of Forest Certification (PEFC)**[48] is an umbrella organisation and mutual recognition scheme of national standards – e.g. UK Woodland Assurance Standard in the UK or the USA's Sustainable Forestry Initiative (SFI). PEFC promotes sustainable forest management (SFM) through independent thirdparty certification.

Both schemes share the same objectives, namely the certification of forests to credible, independently verified standards of responsible forest management.

Certification has a number of features in common with legality verification. All the major certification schemes demand adherence to national and local laws as a precondition for certification. If a forest area is certified then the wood production from that forest should be in compliance with all relevant laws. As a result, certification plays an important role in addressing legality and sustainability of timber in supply chains.

However, it does not in and by itself ensure legality. Its impact globally is also limited by the fact that only around 30% of all roundwood globally is certified. Forest certification and CoC[49] systems were initially established to tackle deforestation and help legitimate forest users demonstrate sustainable forest management. They do not track and monitor each unit of wood. Instead, organizations certify companies and forest management units. This means that despite material being certified, there is no absolute guarantee that the unit originated from a certified forest and was legally harvested.

The voluntary and market-based nature of certification has also given rise to allegations of conflict of interest where commercial interests could influence legality compliance decisions. Certification is also not accepted as automatic proof of compliance with legal verification requirements, such as the EUTR.[50] However, certification is often utilized by companies as a tool to meet requirements and can serve as an important element for risk assessment and mitigation.

Case Study: From Paper to Practice: Ensuring Legal Compliance Beyond Certification[51]

In 2018, British timber operator Hardwood Dimensions (Holdings) Ltd was fined £4,000 for breaching the EU Timber Regulation (EUTR) prohibiting the importing and sale of illegally harvested timber, despite the timber being FSC certified. Hardwood Dimensions believed that the fact that the timber was FSC certified was sufficient to comply with the EUTR. However, under the EUTR, operators must apply a due diligence system to avoid placing illegally harvested timber on the EU market.

Hardwood Dimensions was not fined because the wood was of illegal origin – none of the imported material was found to come from an illegal source but rather because the company had failed in its obligation to exercise proper due diligence on its purchases of West African Timber. The case illustrates the need for companies operating on the EU market to perform due diligence assessments on all of their products, even those which carry certification.

Policies, codes of conduct, due diligence and industry standards

In addition to fulfilling legal requirements, many private sector companies and timber trade associations have developed voluntary measures implemented through a mix of guidelines, codes of conduct, responsible purchasing policies and procurement policies for the purchase and sale of legally sourced timber. Many large retailers such as IKEA, Walmart, 3M, Staples, Home Depot, Castorama, and Carrefour, have developed company level purchasing policies, with "legally verified" frequently used as the minimum contract requirement. These measures are often part of corporate social responsibility strategies that have been embraced by companies to meet society's expectations and of growth strategies to improve branding and consumer loyalty, reduce reputational risk, increase market shares and profits, mitigate potential losses of critical environmental services and ensure long-term supply of materials.

Commitments include (a) sectoral standards, certifications and industry associations that outline common principles, criteria and forms of verification within the forestry sector to address illegal logging; (b) company pledges that express a company's commitment in their operations or supply chains; and (c) company codes of conduct that define specific production or sourcing practices that prohibit illegal timber from their supply chains.

Sectoral standards

An example of a sectoral statement is the Confederation of European Paper Industries (CEPI) Legal Logging Code of Conduct for the Paper Industry.[52] The code states CEPI member companies' commitments to combat the illegal logging and trade of illegally harvested wood. Commitments include: to operate in full compliance with laws; to purchase only wood that is legally harvested; to set up traceability systems to ensure compliance; to document the legality of the wood purchased and build internal staff capacity to implement the commitment.

Other examples include the Statement on illegal logging by the International Council of Forest and Paper Associations (ICFPA)[53] and the UK's Timber Trade Federation (TTF), an industry association that works with its members to import and sell wood products in the U.K. The TTF has developed a Sustainability Code of Practice with a generic set of commitments to ensure that TTF Members take steps to manage the environmental, social, and economic impacts of their businesses. As an integral part of this policy, Members must make a public commitment to source timber and timber products from legal and well-managed forests and recognize that third-party certification schemes are a useful tool in providing assurances.[54]

Pledges

Company pledges are publicly stated goals by one or more companies to eliminate illegal timber from their operations, either associated with specific commodities and/or regions, or across entire supply chains. These pledges often involve a vision of change, but are less specific on implementation, criteria and timelines. Pledges are often intended for the public and address global issues. As such the relatively narrow issue of illegal timber trade may be contained within a broader theme. For example, a wave of major corporations have stepped forward in the last decade with voluntary pledges to address illegal deforestation, initiated and supported by leading industry and multi-stakeholder groups like the Consumer Goods

Forum (CGF) and Tropical Forest Alliance 2020 (TFA2020). While "illegal deforestation" is not a universally agreed upon term, the use of illegally harvested timber would be incompatible with these pledges.

For example, Unilever has made a "zero deforestation pledge" with the goal of a deforestation-free supply chain by 2023.[55] While this pledge does not explicitly address illegal logging, it outlines commitments to buy paper and board packaging materials "from certified sources with a full 'chain of custody' from the plantation to us". Unilever has also shifted a significant amount of its sourcing to places where the risk of deforestation is low and in areas where deforestation risks remain high, the company complements certification schemes with other forms of legal verification. The zero-deforestation pledge thus also addresses illegal logging and use of illicit timber.

Codes of conducts

Common across all codes of conduct is the general obligation that suppliers comply with all applicable laws and regulations. Strictly applied, this requirement would in and of itself cover most instances of illegal logging and illicit timber trade, as these by their very nature violate national laws. However, it is common within large timber producers and consumers to include specific criteria within their codes of conduct or develop supplementary polices that define specific production or sourcing practices that eliminate illegal wood from its operations and supply chains. For example, they may require sourcing from approved suppliers who meet pre-defined sustainable forestry principles; require or give preference to suppliers who offer third-party certified products; exclude sourcing from certain areas (for example, high conservation value forests); or audit suppliers' operations to ensure compliance with policy requirements.

Case study: IKEA Way of Purchasing Products and Services (IWAY)[56]

IWAY – The IKEA Way of Purchasing Products and Services – is IKEA's supplier code of conduct for responsibly procuring products, services, materials and components.

IWAY requirements are based on a 4-step staircase model: Must, Basic, Advanced and Excellent. The IWAY Musts, or start up requirements, are those which must be in place before a contract is signed with IKEA and these requirements must be maintained at all times. In addition to the general IWAY standard, IKEA has also developed a specific IWAY standard for the forestry sector, which describes requirements on forestry applicable materials and related procurement practices for IKEA suppliers. These materials must, for example:

- Only come from forests that have been legally harvested.
- Not come from forestry operations engaged in forest-related social conflicts.
- Not be harvested in geographically identified intact natural forests (INF) or high conservation value forests, unless they are certified as responsibly managed and there is an approval from IKEA.

IKEA requires all suppliers to source wood that meets their more sustainable sources requirements (FSC-certified or recycled wood). In addition to FSC certification, IKEA enforces strict requirements on all suppliers to ensure that wood which enters the IKEA supply chain is responsibly sourced. Since 2017, all wood sourced by IKEA from areas with a high risk of illegal logging, has been FSC-certified. In 2020 more than 98% of the wood used for IKEA products is either FSC-certified or recycled.

All suppliers must be able to track the origin of the wood used in IKEA products. IKEA requires that all suppliers provide reports on their wood use three times a year and be able to provide more information, upon request, within 48 hours. IKEA's global Wood Supply & Forestry team also performs approximately 200 global audits annually. The purpose of these audits is to verify the compliance of the wood entering supply chains against IKEA requirements.

To prevent illegally and unsustainably harvested wood from entering its supply chains, suppliers are often encouraged, and in some cases required, to use wood that has been certified (FSC and PEFC being the most common standards). Certification requirements may also be supplemented by additional traceability and monitoring requirements.

Case study: Beyond profit: 3M's commitment to responsible pulp and paper sourcing[57]

3M works with a broad, complex supply chain, consisting of over 63,900 suppliers in over 270 subcategories in 109 countries around the world. In addition to its general Supplier Responsibility Code, 3M has developed a Pulp and Paper Sourcing Policy, which formalizes the company's supply chain's responsibilities to comply with global regulations and further the causes of sustainable forestry and transparent, responsible supply chains. The policy applies to the selection and retention of all 3M direct (or "tier one") suppliers that provide pulp, paper, or packaging made from wood fibre or plant-based fibre. 3M will only accept virgin fibre that can be traced to the forest source (full supply chain traceability), proven to be obtained legally, and protective of high carbon stock forests, high conservation values, and workers' and indigenous peoples' rights.

Case study: From forests to file folders: Staples' sustainable paper sourcing in action[58]

Staples has a committed preference for sourcing from FSC-certified suppliers. Under certain conditions, Staples will recognize and accept products certified under other standards (PEFC, SFI, and CSA). The Paper Sourcing Policy applies to all paper and wood-based products sold by Staples and paper and wood-based products used internally by Staples, including for construction, packaging, and marketing. The company asks suppliers to confirm the sources of their fibre and to indicate whether their wood fibre has been legally harvested and traded. The policy also requires third parties to conduct audits on random samples of suppliers and requires Staples to periodically verify supplier progress and data reliability.

6.2 Business driven technological solutions

To improve legality, transparency and due diligence requirements, the private sector has developed and adopted timber tracking systems to provide a means of modelling and recording the physical flows of timber and timber products throughout the supply chain. Physical traceability becomes especially critical to prove that the wood is not coming from a protected area when sourcing from high-risk areas.

Timber tagging systems

There is a wide range of traceability technologies and systems in use within forestry supply chains ranging in sophistication and purpose at different points along the forestry supply chains:[59]

Paint markings

Paint markings are the mostly commonly used identification technique because of its low cost, easy application and durability. This typically uses a serial number hand painted or stamped onto individual logs and timbers. However, the practice is labor intensive and prone to misreading and forgery.

Plastic tags

Plastic tags are cheap and easy to apply to timber and have advantages compared to paint markings. Each plastic tag is printed with its own unique identification number which increases legibility and avoids duplication in issuance of identification numbers. Despite the unique identification numbers, plastic tags are still prone to forgery and are less weather resistant than paint markings. Cold temperatures and UV exposure can damage tags or even detach them from the timber. Moreover, the use of physical tags for roundwood used for pulp and paper processes is impractical due to the nature of processing techniques.

Case study: The Plastic Tag Predicament: Overcoming Challenges and Solutions

An industry representative described some of the limits and difficulties with implementing physical tracking of single logs with plastic tags. The company had run a pilot project to be used by the log yard operators themselves, where tags with unique numbers were safely hammered onto the top-ends of the logs. However, during the effort for tagging and registration of the logs was considerable. The operator managed to tag and register roughly 40 m3 of logs per hour. This corresponds to 42 minutes for one truck load of logs with a volume of 28 m3. Moreover, while the registered data would be transparently available to all parties in the supply chain, there was still a potential weakness in that—by accident or deliberately— the origin of logs could be wrongly registered. These systems do also not address the risk of corruption; for example, if the harvesting authorization is obtained through a bribe.

Barcoding

Barcodes are fixed to the timber or timber products and provide a scannable identification number where the readings can be readily transferred electronically to the timber tracking database. The system requires trained staff to operate the readers and often connection to the internet or mobile phone networks. They offer a relatively low cost mechanism which is difficult to forge. However, the barcodes themselves often become detached from the product that they are meant to identify.

Radio Frequency Identification (RFID)

Similar to barcoding, RFID systems provide unique references for timber products. RFID is often regarded as the gold standard because of a number of advantages. It is weather and UV exposure resistant. RFID tags can be automatically read at a distance, preventing human error and drastically reducing recording time. They do not require proper illumination and a precise line of sight (in contrast to QR and barcodes), are unaffected by mud, dirt, or resin. However, it is relatively expensive and requires trained staff and often connection to the internet or mobile phone networks.

Wood Identification Technologies

In addition to physical tracking of timber, several laboratory technologies are being adapted to assist in the verification of claims from suppliers on the origin of timber.

Wood anatomy analysis uses characteristic differences in wood grain, pores and color to verify timber to genus or sub-genus level.

DNA analysis compares genetic sequences between wood samples to determine the species or origin of the wood. The DNA sample is compared with genographic maps in order to establish the material's area of origin. The technique is very resistant to forgery but is relatively expensive and data intensive.

Stable isotope analysis compares the ratios of common elements within wood samples to verify the harvest origin. Stable isotope analysis can only help identify the origin of products, not the species. However, as verifying the origin of harvest is key in concluding low risk for some supply chains, isotope analysis is an extremely useful assessment tool.

Direct Analysis in Real Time Time-of-Flight Mass Spectrometry (DART-TOFMS) is a new technique that can determine the full chemical profile of a piece of wood, thereby establishing a chemical fingerprint that has the possibility to be unique both for species identification as well as region of origin. The advantages of DART-TOFMS is that it is used in open air, requires only a sliver of wood with no preparation, and gives real-time results.

The common thread of all species identification techniques is having a sufficiently large database for comparison. These techniques are particularly useful as an additional tool to determine the country of origin in case of deliveries from high-risk countries.[60]

Other techniques

- **Satellite Monitoring.** Companies are increasingly using satellite monitoring as a tool for forestry conservation. One such example is the collaboration between Earthworm Foundation and Airbus called Starling. By utilizing a combination of spot images and radar satellite technology, Starling can differentiate crop types, replanting, and deforestation even through cloud cover. Unlike limited ground-based audits, satellite monitoring offers frequent and precise updates, aiding in better understanding on-ground situations. Originally developed to verify "No Deforestation" commitments, this technology is also effective in monitoring and preventing illegal logging activities. For instance, 3M employs Starling to oversee its forest sources in British Columbia, Canada, ensuring responsible sourcing and the protection of High Conservation Values (HCVs).[61]

- **Maritime targeting.** In response to its commitments as a signatory of the United for Wildlife (UfW) Buckingham Palace declaration, the Mediterranean Shipping Company (MSC) has set up three specialized screening centers in strategic locations and created a brand-new detection system using the most recent algorithm technologies to analyze incoming booking and shipping documentations in real-time, evaluating Illegal Wildlife Trade (IWT) risk and consequently assigning to each shipment a risk score according to specific criteria such as routing and shipper information.[62]
- **TimFlow.** The HS Timber Group traceability system TimFlow collects, analyzes and publishes data on truck-based log transports from the forest to the mills. At the loading point there is a timestamp, a photo and the GPS coordinates of the load. This is then linked to an online code from the state system. This is a unique code which is unique for each delivery node. When the material is received at the mill a photo is taken and compared with the photo at the loading point to identify any manipulation or fraud. The system is very cost effective, as the most important cost components are the GPS trackers and GSM modules in the trucks. The system is also transparent and information collected, including GPS data and photos of the consignments, can be viewed by the general public at www.timflow.com.

7. Recommendations

The following are focused recommendations to help combat illicit trade forestry products by governments and private entities:

Address corruption and establish robust forestry governance. At its root, illegal logging and/or illegal forest activity are a symptom of corruption, graft, lax enforcement, and poor social conditions. No single system can overcome weak governance. They are embedded into the legal system of each country. If the legal systems are weak then timber tracking, due diligence, and monitoring systems on their own will not be able to reduce fraud and combat illegal logging. Similarly, international import regulations (e.g., EUTR, Lacey Act) only regulate cross-border timber trade. However, most illegally produced timber is used domestically, does not enter international trade and fall outside the scope of these regulations.[63]

Strike the right balance between enforcing legality and maintaining practicality to sustain the trade of legal timber. It is imperative to ensure that the trade of legal timber remains viable without imposing overly complex procedures on forest and timber sector entities. If the process of dealing in illegal timber proves to be less cumbersome than that of legal timber, the efficacy of certification, verification, and tracking systems will be limited in effecting change.

Improve capacity and resources in producing countries to develop credible internal monitoring systems, as well as effective and independent certification and verification bodies.

Create incentives for the private sector. Encourage certification by providing incentives for stepwise approaches coupled with financial and non-financial incentives (e.g., fiscal incentives, reputational gains for certified companies, linking business and SFM managers, government regulations on green building codes and green public procurement).

Harmonize and integrate legality verification and certification standards. Foster alignment between legality verification and certification standards, building upon synergies in procedures, methods and standards to systematically include the legal requirements defined in national legality assurance standards and international legality standards for the certifiable activities in the supply chain. Collaboration between certification entities, governmental bodies, and pertinent stakeholders is vital for effectively harmonizing these standards, leveraging procedural synergies, and ensuring the comprehensive integration of legal criteria from national legality assurance standards applicable to certifiable supply chain activities.

Strengthen and enforce criminal penalties. Clearly define sentencing guidelines for forest crime and carry out prosecutions under relevant national laws which specify the most severe penalties.

Forestry sector enterprises should display leadership by adopting established legal verification and certification processes (forest and CoC) to validate legality and sustainability. Actively engage and support governmental and regional initiatives aimed at enhancing transparency and reinforcing regulations against illegal logging and related trade in illicit forest goods. Encourage industry associations to exemplify their dedication to combating illegal logging and associated trade by endorsing and disseminating codes of conduct within their memberships.

Address weaknesses in the maritime supply chain. All parties in the international maritime supply chain have a responsibility to ensure that transactions comply with the numerous export, transit, and trans-shipment requirements.

- **Implement supply chain security programs** such as World Customs Organization's Authorized Economic Operator (AEO) programme and the Customs Trade Partnership Against Terrorism (CTPAT). Such programs help businesses reduce risk from exposure to illicit activities while benefitting from facilitated trade transactions.
- **Implement robust Know Your Customer (KYC)** practices to ensure the legitimacy of a company's clients' involvement in the timber trade.
- **Conduct due diligence when hiring new employees** to verify their integrity and any potential past involvement in fraudulent activities. Adopt a zero-tolerance corporate policy for any act linked to illegal wildlife trade and related corrupt behavior.
- **Develop and maintain a caution list of fraudulent shippers/clients** and other known bad actors (persons, companies, freight forwarding and clearing agents suspected of illegal timber trading or other illicit activities). Integrate illicit timber specific red flag indicators cargo risk assessment systems that may already be in place to detect other forms of contraband.
- **Elevate awareness, lend support, and draw insights from private sector-driven initiatives.** Good examples include the Maritime Anti-Corruption Network (MACN) *(https://macn.dk/home/)*, United for Wildlife *(https://unitedforwildlife.org)*, and The ROUTES Partnership *(https://routespartnership.org)*.

NOTES

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NFWFL and World Resources Institute with aid from US Forest Service International Programs are working to increase the database size for DART TOF MS. The Forensic Spectra of Trees Database (ForeST©) currently holds over 16,000 DART-TOFMS reference spectra of CITES and commercially significant species. See also https://nph.onlinelibrary.wiley.com/doi/full/10.1002/ppp3.10164

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VI. OIL PRODUCTS

1. Overview and findings

Illicit oil and trade dynamics

What is illicit trade in oil?

Illicit trade in oil encompasses a variety of illegal conduct and practices aimed at the misappropriation of either crude oil or oil that has been refined into fuel. It covers, notably, smuggling operations at land or sea, fraudulent schemes designed to disguise oil's origins or volumes and adulteration practices, which involve the mixing of legal oil with stolen/lower quality oil and/or substances such as mud, waste chemicals and even air.

The way in which the illicit oil trade manifests itself worldwide depends on numerous local and international factors such as the stage in which oil products are diverted from legitimate supply chains, the geopolitical situation of affected countries, oil's distribution channels and related infrastructure.

In this publication, the term "oil theft" is used as a catch-all term for the illicit oil trade.

In 2021, Ernst & Young estimated that around USD 133 billion worth of crude oil and refined products are stolen or adulterated every year.[1] Further, the African Development Bank estimates the value of the illicit oil trade in Africa as worth nearly US$100 billion a year.[2] In certain parts of the continent, such as Nigeria, oil theft has been estimated to be 400,000 barrels per day, costing the country up to US$1 billion per year.[3]

At a basic level, the illicit oil trade is performed by artisanal fishers attracted by the prospect of making more money from a day spent on oil smuggling than in a month of fishing, particularly in coastal areas where fish stocks are depleted through over-fishing practices. At a higher level, the phenomenon is a highly lucrative business involving sophisticated criminal groups with enough capital, resources and logistical capacity to handle big volumes of product and cause detrimental effects on the security and socio-economic stability of entire communities.

The illicit oil trade has substantial economic and financial impacts. As is the case for alcohol and tobacco, oil products are subject to excise duties, which are a considerable source of revenue for governments. When significant amounts of these products are illicitly traded, countries are severely prejudiced in their ability to use tax-derived income for a variety of purposes, including to deliver sufficient levels of public services. As an example, it is estimated that the EU loses more than USD 4 billion per year in fiscal revenues due to hydrocarbon fraud schemes."[4]

Moreover, when domestic fuel consumption is subsidized and prices for consumers are kept below market levels, strong incentives are created for the smuggling of fuel to neighboring countries that do not have subsidies in place, eventually causing significant and unintended increases in public expenditure for source countries.[5] Even when fuel is not subsidized, structural cross-border fuel-price differences between low- and high-tax jurisdictions represent a powerful driver towards oil smuggling, further eroding governmental revenues.

The environment stands out as a major victim of illicit oil trade operations too. Methods used to divert hydrocarbons, such as the installation of taps on oil pipelines or ship-to-ship transfers are often the cause of oil spills and explosions with severe consequences in terms of soil and water contamination. In some cases, the environmental degradation may be accentuated by the fact that oil leaks and spills may go undetected for some time, particularly if thieves intend to repeat tapping at the same location.

Beyond the damage caused by oil leakages, adulteration practices are also known to have adverse effects on the environment. The introduction of uncontrolled substances into oil products may result in the emission of highly polluting elements into the atmosphere. Additionally, adulterated oil, obtained for example by mixing gasoline and kerosene, can leave harmful deposits in car engines and ultimately lead to premature vehicle obsolescence and, indirectly, damage to consumers.[6]

2. *Modus operandi*

2.1 Supply chain modalities

Oil theft may occur at different nodes along the oil supply chain. Downstream, illegal activities commonly consist of tapping pipelines used for the movement of crude. Upstream, theft may take place after crude oil has been turned into fuel and occur at a variety of spots such as refineries, storage facilities, during fuel tanker loading operations and at gas filling stations.[7]

As highlighted in a Chatham House report focusing on Nigeria, "the government's system for selling its own oil attracts many shadowy middlemen, creating a confusing, high-risk marketplace. […] The specifics of who steals oil are elusive, even in Nigeria. A typical large-scale theft network has facilitators, operations and security people, local and foreign transport, buyers and sellers, and a range of opportunists."[8]

Techniques employed to divert oil from legitimate supply chains have become increasingly sophisticated and inventive, with smugglers even retrofitting ordinary fishing trawlers to be able to move undetected significant amounts of stolen fuels across international borders.[9] Some common illicit trade modalities and escamotages used to obfuscate oil's illicit origin include:

- **Illegal tapping.** By installing illicit taps, traffickers divert oil or other refined products from pipelines. In Mexico, the national energy regulator estimated that between 2009 and 2016, illegal tapping occurred approximately every 1.4 kms along the national State-owned petroleum company's 14,000-km-long network.[10]
- **Illegal Bunkering.** Stolen oil is pumped onto small barges, which subsequently go to the sea to load tankers. In Nigeria, the Niger Delta's labyrinth of small water streams offers an ideal place for bunkering activities to go undetected.[11]

- **Ship-to-ship transfers.** This modality involves the transfer of stolen oil from vessels that may raise "red flags" to more reputable ships, which increases the chances of the ship's cargo passing off as legitimate. Ship-to-ship transfers have occurred, for example, in the middle of the Mediterranean Sea for the purpose of facilitating the illegal importation of crude oil from Libya into the EU.[12]
- **Hijacking vessels for oil theft.** This modality has been occurring with some frequency in areas such as the Gulf of Guinea and Southeast Asia.[13]
- **Origin laundering.** Oil's illicit origin can be obfuscated by exploiting oil infrastructure for making illicit cargoes appear clean. For instance, an offshore facility in Ghana, which was producing only ten thousand barrels per day, but had a maximum capacity of one hundred thousand barrels per day, was found exporting four hundred thousand barrels per day. The facility was being used to launder stolen Nigerian crude, which would be exported from the offshore site with a legitimate Ghanian export certificate.[14]
- **Misappropriation through volume over- and under-declarations.** Illegal profits from oil transactions can be made by "overstating a fuel bunker by recording a higher volume of fuel delivered than was actually the case […]. Conversely, understating the fuel-in-tank volume before the bunker operation commences allows the bunker company to sell more ship fuel; this excess can then be sold by the ship crew at sea to fuel traders in illegal fuel transactions."[15]
- **Meter tampering.** This represents a common fraud modality at commercial facilities such as fuel bunkers as well as at consumer retail facilities such as gas filling stations.

Case study: Piracy on the high seas in Southeast Asia – a case study of oil cargo theft by hijacking.[16]

According to the Information Sharing Center of ReCAAP (Asia's Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships), several factors converge to explain the growing pace of ship hijackings aimed at oil cargo theft in Southeast Asia. Key factors include:

- The wide accessibility of seaborne shipping in the region, which translates in the presence of several isolated and slow-moving oil tankers;
- Technological advances, resulting in improved ship-operating management, which, in turn, reduce the size of crews and enable perpetrators to track ship position, speed and itinerary as well as collect information about the cargo. Data accessibility through the Internet and live portals allows hijackers to obtain up-to-date information.

A large number of oil cargo thefts in Southeast Asian waters occur in the South China Sea, which is characterized by significant sea traffic volumes. A common modus operandi involves boarding the victim ship during hours of darkness, tie or lock-up the crew, take control of the ship and steer it further away from shore to avoid detection by law enforcement agencies. Oil cargo is siphoned into another tanker or barge situated alongside the victim ship. The offenders often leave the ship with the crew's cash and personal belongings and destroy the vessel's communication and navigation equipment to delay the crew from reporting the incident.

A selection of country- and region- specific modalities of oil theft include:

Mexico

Pipeline tapping is the most common method used to steal oil in the country. In 2018, fuel theft cost PEMEX - the State-owned oil company - an estimated USD 3 billion in losses.[17] Criminal groups are reported to intimidate PEMEX employees into giving them information on transport routes, timelines, number of people working at refineries, etc.[18/19]

Nigeria

Illegal oil bunkering has become a sophisticated operation that sees traffickers tapping directly into pipelines a little away from oil company facilities, and siphon oil to barges that are hidden in small creeks in mangrove forests. Often, individuals from the police and the military are involved in the process or are bribed to turn a blind eye.[20]

Southeast Asia

Oil smugglers operating in sea routes are driven by the lucrative prospects offered by a large black market.[21] Oil companies have reported planning for losses in advance due to oil theft being a common occurrence.[22] An alleged oil heist in Singapore in 2018 involved thieves siphoning thousands of tons of fuel from Royal Dutch Shell's Pulau Bukom refinery, often during business hours, and distributing it around the region.[23]

China

In 2021, in China's Guangdong region, the police arrested several people including BP staff in connection with the illicit trade of light cycle oil (LCO). LCO is an inferior petrochemical feedstock to diesel, which does not attract any consumption tax, making it attractive for traders to use the tax loophole and make illicit profits through tax evasion. The low price of LCO also made it possible to adulterate high priced diesel with low priced and quality LCO, resulting in USD 3.9 billion loss in revenues from this market.[24]

2.2 Transport Dynamics

Maritime transport

It is estimated that 90% of the world's goods, 30% of which are hydrocarbons, are traded by sea. Whether stored in large or small tankers, a majority of the illicitly traded oil is also moved around the world in ships.[25]

Non-state actors operating offshore exploit loopholes left by the international law of the sea. Also, where larger vessels may attract unwanted attention, smaller fishing boats have been known to smuggle fuel. Illegal oil transfers are often conducted from ship to ship on neutral waters – with one ship recognized as carrying legitimate imports at the final port of destination. In this way, for example, illegal crude oil from countries such as Libya or Syria have found its way to EU markets.[26]

In some instances, oil is funneled into secret compartments on large-capacity ships capable of carrying tens of thousands of barrels, i.e. a portion of oil is secretly moved into illicit storage tanks while the legitimate ones are being filled. Sometimes, a ship is loaded entirely with stolen oil.[27]

Moreover, the maritime route is often exploited by resorting to forged/ fraudulent documentation whereby ship masters overstate how much fuel their vessel is carrying as a way to sell the excess.[28] Falsified bills of lading may misrepresent product origins, or may alter dates to exploit variations in oil price. In Singapore, for instance, fraud has taken the form of falsified documentation about ship-to-ship transfers, covering up the theft of large quantities of product. The loss of content is then masked by adulteration, or sometimes even by heating the remaining oil to temporarily expand its volume.[29]

Land transport

Stolen oil reaches land to end customers through the black market in the same country or across borders by means of trucks, river boats and even donkeys. For example, between the Moroccan and Algerian border, oil is legitimately sourced from Algerian fueling stations in regional cities and towns, and then taken to storage depots not far from the border. At night, the fuel is transferred to jerry cans and transported across the border via motor transport or more recently donkeys and mules, the latter being able to carry up to thirty full jerry cans. The advantage of using animals includes being able to travel across any terrain, sometimes unaccompanied, and through unpatrolled areas. Once across the border, the smuggled fuel is sold along the roads or transported to urban markets.[30]

Case study: Oil's dark routes – vulnerabilities in Nigeria's maritime transport and the illicit trade[31]

In the general public narrative about Nigerian oil theft, tankers carry stolen crude to foreign refineries for instant processing and sale. In fact, reality appears to be more complex, involving complicated international delivery routes. After leaving Nigerian waters, a mother ship carrying stolen crude can, for example:

- Offload all of its cargo at a single refinery;
- Offload parts of its cargo at different refineries;
- Offload all or part of its cargo into storage;
- Transfer all or part of its cargo to another ship;
- Transfer all or part of its cargo to multiple ships.

While none of the above-mentioned operations are per se an indication of ongoing illicit activity, oil traffickers are known for exploiting the fragmented nature of oil supply chains via maritime routes to ensure that stolen products are eventually absorbed into legitimate markets without leaving a trace.

2.3 Hotspots

2.3.1 Online platforms

Given the nature and size of the commodity, there is hardly any report on the existence of links between the illicit trade in oil and online platforms.

2.3.2 Free Trade Zones

No specific information could be collected on the nature and level of the illicit trade in oil involving FTZs.

2.3.3 Postal systems/ express couriers

Given the nature and size of the commodity, the use of postal systems in oil theft would not be possible.

3. *Links to organized crime, corruption and other criminal offences*

3.1 Organized crime

In oil rich regions, organized crime syndicates involved in the illicit oil business have much in common with other criminal groups in terms of skills, smuggling methodologies and routes. They are often involved in a variety of criminal operations ranging from ship piracy to stealing tanker cargoes to kidnapping crews. The proceeds of oil theft frequently end up financing other criminal activities, triggering violence within local communities.[32]

A good illustration of the highly profitable nature of the illicit oil trade and its ability to lure organized criminal groups comes from Central America, where narco-cartels reportedly regard illegal oil trafficking as a means to diversify their portfolio of activities and as a less risky business than drug trafficking. Los Zetas, for example, is widely believed to be at the forefront of fuel theft. While there have been indications that large cartels such as the Sinaloa Cartel may also be involved, the practice is now so widespread it likely involves any number of groups of varying sizes and organizational levels. In Mexico, reportedly, "at peak prices, sophisticated criminals with tapping skills were able to drain $90,000 worth of refined gasoline in less than seven minutes, making fuel tapping even more lucrative than the narcotics trade."[33]

During the pandemic, oil theft spread across several regions as a way for criminal syndicates to tap into the flourishing black markets and prop up their finances, which had been damaged by global lockdown-driven supply chain interruptions. For example, while until the pandemic most instances of oil theft in Latin America concerned illegal taps on pipelines, when the Covid-19 crisis set in, the bolder criminal groups started to attack oil platforms out at sea or built their own makeshift refineries.[34] Their actions were facilitated by the sudden shift in priorities for law enforcement agencies, whose resources were to a great extent devoted to enforce lockdowns and violent crimes, leaving the illicit oil trade off their radar.

Case study: Operation Petrol-Mafie SPA[35]

In April 2021, Italian law enforcement authorities ("Gu ardia di Finanza") arrested over 70 members of 'Ndrangheta and Camorra groups. The operation shed light on organized crime's infiltration into the mineral and gas sector, especially the country's so called 'white pumps' - unbranded stations that are common around the country.

Operation Petrol-Mafie SPA critically revealed the involvement of almost every significant Italian mafia group in a number of illegal schemes affecting the oil sector, together laundering over 200 million USD. One of those groups, the Camorra's Moccia clan, was found exploiting the oil business as a channel to launder funds gained from other criminal activities.

Two major fraud schemes were run by the 'Ndrangheta and involved 12 companies, five fuel depots and 37 road distributors. In one scheme, artificial petroleum products (mixtures) and lubricating oils were imported, mostly from Eastern Europe, and later on marketed as diesel for transport, resulting in substantial profit due to different taxation levels. The other scheme involved fuel for transport mislabeled as agricultural fuel, which benefits from a subsidized tax rate.

According to the World Atlas of Illicit Flows - a joint initiative by Interpol, the Global Initiative, and the Norwegian Center for Global Analysis - illegally supplied oil, gas, gasoline and diesel sales account for 20% of the income of non-state armed groups in conflict. In 2014 and 2015, it represented the biggest source of income for Islamic State.[36]

3.2 Corruption

Corruption practices in the form of bribery, misappropriation of funds and loyalty payments involving State officials are significant enablers of the illicit trade in oil. Security guards may also be actively involved in oil theft[37] as well as law enforcement officials and/or military personnel who work hand in hand with traffickers to ensure that these latter can operate under the radar. In Nigeria, for example, members of the armed forces have reportedly accepted bribes in exchange for turning a blind eye to illegal activity and protecting oil traffickers' access to extraction points from rival criminal gangs.[38]

Law enforcement authorities may be bribed in order to prosecute members of competing criminal organizations. Journalists, environmental activists and police officers that expose oil trafficking schemes may not only receive threats, but also become the subject of criminal investigations themselves.

In many instances current or former employees of oil companies collude with traffickers to provide technical knowledge of oil stations, locations of pipelines, etc.

Case study: From within: understanding how 'insiders' facilitate the illicit oil trade[40]

Employees of oil-related infrastructure often play a critical role in enabling pipeline tapping by oil traffickers, for instance by providing them with information on the time and location at which the oil will not be flowing.

In Nigeria, notably, the physical danger and technical complexity involved in "hot tapping" (i.e. making a connection to existing piping without service interruption) means that only current and former-employees possess the necessary skills. While "the former can also provide 'inside' information on security measures and inspection schedules", the latter "have been known to join illicit networks in the Delta region, providing both technical expertise and precise knowledge of pipeline vulnerabilities."[41] In Mexico, there have been reports of employees from PEMEX (the government-owned oil company) being coerced into the oil theft trade by criminal groups. In 2017 to 2018, PEMEX fired about 100 workers for complicity in fuel theft schemes and many more were under investigation for their ties to organized crime and for sharing information about pipelines location.

3.3 Money Laundering

Not unlike the gains stemming from illicit trade in other assets, the proceeds of oil theft are laundered using a variety of mechanisms, including complex financial vehicles and off-shore centers. Criminal networks often rely on foreign banks to launder or store their illicit profits, including bulk cash smuggling, delayed deposits, heavy use of middlemen, shell companies and tax havens, cycling cash through legitimate businesses and cash purchases of luxury goods.[42]

Illegal proceeds may enter the banking circuit through the work of different types of intermediaries (e.g. accountants, lawyers, real-estate brokers). These latter may sometimes collude with an insider – such as a corrupt branch manager or other mid-level bank employee – to personally ensure that illicit transactions are not detected by internal compliance mechanisms designed to identify and block suspicious transactions.[43]

Oil theft schemes are often heavily cash-based, which greatly facilitate the task of disguising proceeds' illicit origin. Throughout Latin America, for example, billions of euros are being laundered out of petrol stations across the region, with Brazil alone witnessing more than 3 billion euros in illegal profits annually.[44] In Nigeria, vast amounts of cash circulate as a result of illegal oil transactions outside the formal banking system.[45]

3.4 Forced Labor

Site-level data gathered by British Petroleum in 2020 in the context of a trail initiative regarding the performance of various businesses in terms of social, human rights and labor rights revealed that among the 17 sites participating in the project, 65% had identified problems related to labor rights in the course of their ongoing monitoring efforts. These issues encompassed matters such as wages, deductions, employment conditions, and working hours.[46]

While the above findings do not constitute proof of forced labor affecting the sector, they point to the need to undertake further research into the possible exploitation of forced labor within illegal oil supply chains.

4. Impact on the UN Sustainable Development Goals

The illicit trade in oil has both direct and indirect adverse impacts on the achievement of the Sustainable Development Goals (SDGs). Below is an overview of how the SDGs might be affected.

- **SDG 3.** *Good health and well-being.* Adulterated fuels produce higher levels of harmful auto emissions and known carcinogens that impact air quality and climate.[47] This is particularly true when the adulterant used is not meant for combustion.[48] Moreover, illegal fuel laundering plants often indiscriminately dump waste products, causing adverse impacts on human health, livelihoods, food and fuel stocks.[49]
- **SDG 6.** *Clean water and sanitation.* Illegal tapping, bunkering and ship transfers carry a higher probability for oil spills and blown pipelines, thereby increasing risks of water contamination.
- **SDG 7.** *Affordable and clean energy.* The illicit trade in oil has negative effects on energy access. The diversion of subsidized kerosene for use as an adulterant in costlier, nonsubsidized diesel and gasoline robs the most vulnerable citizens of their access to kerosene as cooking fuel and consequently undermines government subsidy programs aiming to deliver access to affordable, reliable, sustainable and modern energy. Fuel fraud, smuggling, and adulteration also may be counterproductive to environmental policies (e.g. excise taxes) aimed at reducing driving, improving substitution of more efficient vehicles and encouraging transition to cleaner alternative fuels. Diversion of kerosene for use as a transportation fuel adulterant robs

poor and vulnerable citizens of access to modern energy for cooking and lighting.

- **SDG 8.** *Decent work and economic growth.* Impacts are generally more severe in developing countries. Oil theft has severe adverse effects on tax revenue, especially in resource-rich, developing countries where petroleum industry royalties and tax payments are used to stimulate economic growth and finance development.
- **SDG 9.** *Industry, innovation and infrastructure.* Oil theft robs governments of excise taxes revenues to help fund infrastructure investments, thereby adversely affecting industry and infrastructure especially in developing nations.
- **SDG 14.** *Life below water.* As discussed under SDG 6, illegal tapping, bunkering and ship transfers carry a higher probability of oil spills into water bodies that harm life below water.
- **SDG 15.** *Life on land.* Risk of contamination from oil spills and blown pipelines contaminates land and soil and accelerates degradation of ecosystems and jeopardizes biodiversity.
- **SDG 16.** *Peace, justice and strong institutions.* Oil theft and the illicit oil market have been riddled with conflict. Instability in regions that are oil rich threatens national security and economic stability, which are necessary ingredients for business investment. Oil smuggling and fuel theft present a global security concern, generating a lucrative source of financial income for organized crime, non-state actors and terrorist groups, with examples ranging from Islamic State terrorists to Niger Delta militants and Mexican drug cartels.[50/51] In one instance, attempts to steal fuel from a pipeline north of Mexico City in January 2019 caused an explosion that killed at least 79 people and injured 81 others.[52]
- **SDG 17.** *Partnership for the goals.* Widespread illicit trade in oil has a debilitating effect on efforts to improve domestic resource mobilization by denying the government a significant source of potential tax income.

5. Institutional framework

This section features a selection of the most relevant initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

Compared to other industry sectors, there is a paucity of international responses which specifically focus on reducing the scope of and mitigating the effects of illicit trade in oil. Most initiatives concentrate on the environmental damage caused by oils spills into the maritime domain, whether or not these occur as a result of legal operations. Key regulatory frameworks in this field include the UN Convention on the law of the sea (in particular Part XII on the "Protection and Preservation of the Marine Environment"), and a number of IMO-based instruments, notably MARPOL73/78, which set out requirements for vessels to prevent oil pollution.

Beyond the maritime/environmental domain, a selection of initiatives include:

EU Fifth Money Laundering Directive

Entered into force in January 2020, the Fifth Money-Laundering Directive (5MLD) emphasizes the need for "obliged entities" (e.g. banks, financial institutions and credit reference agencies) to address the constantly changing nature of financial crimes by strengthening their due diligence procedures. The 5MLD specifically expands the requirement for enhanced due diligence to apply on "transactions related to oil" (alongside arms, precious metals, art and tobacco). As a result, obliged entities within the EU space are now required to collect information on the intended nature of the business relationship, the source of wealth, funds of the customer and the underlying beneficial owners.[53]

Regional Cooperation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP)

ReCAAP is Asia's first regional inter-governmental agreement to promote and enhance information sharing and capacity building against piracy and armed robbery against ships in the region. Its 20 contracting parties include 14 Asian countries plus Australia, Norway, the Netherlands, Denmark, the United Kingdom, and the United States. ReCAAP uses data analytics to identify correlations and trends related to piracy and armed robbery against ships at sea. It provides relevant information to its Information Sharing Centre (ISC) and Information Network System (IFN) to prevent further incidents.[54]

In view of the recrudescence of the problem in recent years, ReCAAP elaborated a full guide on the threat of piracy and armed robbery against ships in Asia, particularly focusing on incidents involving oil cargo theft. The guide assists ships to avoid, deter or delay such incidents as well as to manage post-incident actions.[55]

Djibouti Code of conduct

Originally adopted in 2009 under the auspices of IMO and revised in 2017, the Djibouti Code of conduct calls on its 20 signatory States (from the Western Indian Ocean and the Gulf of Aden) to cooperate to the fullest possible extent to repress transnational organized crime in the maritime domain.

Crude oil theft, notably, is listed alongside terrorism, IUU fishing and other criminal domains as an area in relation to which signatories are expected to enhance information-sharing, interdict ships and/or aircraft suspected of engaging in such activities, cooperate for the apprehension and prosecution of alleged offenders, etc. Participating countries also commit to establishing multi-agency, multidisciplinary national maritime security and facilitation committees, with similar arrangements at port level, to develop action plans and to implement effective security procedures.[56]

Europol-supported law enforcement operation against fuel fraud by EU Member States

Launched in 2019, the year-long operation saw law enforcement authorities from 23 EU Member States exchanging intelligence on modus operandi, routes, products and economic operators involved in fuel fraud schemes. Europol contributed by facilitating international cooperation between national authorities, cross-checking data against Europol's databases and providing analytical support.[57]

Overall, the operation led to:

- 5.2 million liters of designer fuel seized (worth around EUR 6.8 million);
- 78 tractor units, 78 trailer units (heavy goods vehicles) and 3 vans seized;
- 93 investigations initiated;
- 59 people arrested;
- EUR 39.2 million in revenue loss prevented;
- EUR 331 000 and other assets (properties, luxury vehicles, etc.) seized;
- 186 bank accounts frozen;
- 4 weapons and telescopic sights seized;
- 1 jamming device seized;
- 11 ISO tank containers seized;
- illegal fuel filling stations and equipment for fuel distribution seized.

5.2 Selected national responses

Ghana's pilot project on molecular marking

Seeking to reduce adulteration of its oil products, in February 2013 Ghana launched the Petroleum Product Marking Scheme (PPMS) on a trial basis. Overseen by the National Petroleum Authority of Ghana (NPA), the pilot program was deemed successful and fully launched in early 2014. Molecular markers are mixed into fuel coming into Ghana, enabling NPA field inspectors to screen retail fuel stations efficiently and immediately determine the source of the fuel. All subsidized fuels are also marked. The PPMS has had almost immediate effect on the domestic illicit activity in Ghana. Figures indicate that fuel adulteration in Ghana has dropped by 78 percent as a result of it.[58]

Nigeria's Extractive Industries Transparency Initiative (NEITI)

Following its adherence to the Extractive Industries Transparency Initiative (EITI) in 2003 (see Section 4.7.1), Nigeria established the Nigeria Extractive Industries Transparency Initiative (NEITI), thus becoming the first country to institutionalize the implementation of the EITI through a triple mechanism:

- The NEITI Act 2007;
- A national EITI Secretariat with full-time staff, devoted entirely to EITI implementation;
- The provision of an annual budget for EITI implementation and legislative over-sight at the national level.[59]

In 2020, as part of the measures taken by the Nigerian government to strengthen the fiscal sector in the fallout of the COVID-19 pandemic, fuel subsidies were removed in the revised 2020 budget with a view to reducing cross-border fuel smuggling.[60]

Mexico's strategy to tackle oil theft

In 2018, the Mexican government took a number of steps to tackle the rampant illicit oil trade affecting the country. In addition to enhancing the monitoring the pipelines of Pemex - the State-owned oil company - and initiating criminal proceedings against PEMEX employees,[61] under the Joint Plan of Attention to Strategic Facilities of PEMEX, the country conducted a military-assisted crackdown on PEMEX's facilities to stop oil theft. The process led to the discovery of secret pipelines used for siphoning fuel.[62] The government reported an initial reduction of 17.4 percent in the incidence of this crime, compared to the previous month.[63]

The Mexican Government has also sought to respond to the growing problem of oil theft by adopting stricter security measures. For example, in 2019, the President, in response to the massive losses suffered by PEMEX due to oil theft, prompted the government to shut theft-prone pipelines, move more transportation to tank trucks and militarize several state oil installations. The operations involved fixing 13,600 illegal taps on pipelines, the recovery of 8.3 million liters of fuel and the seizure or recovery of 3,800 tank trucks and 66 boats. Pemex bought 612 tank trucks out of a planned 671, and hired an additional 1,681 drivers to move 1.75 billion liters in 2019.[64]

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

Oil-related supply chains involve a wide range of private-sector stakeholders including oil producers, refiners, shippers, marketers and distributors focusing on the supply chain of refined oil. Other industry stakeholders offer equipment and services that can be used to help counter refined oil theft. These include: oil marking and track and trace companies, those monitoring the movement of vehicles and vessels, surveillance companies providing equipment such as cameras, sensors and meters for mechanically monitoring stored, piped, or transported oil; and private security entities hired to guard and protect oil in transit/ storage.

Mitigating risks of human rights abuses and labor violations

An important component of industry's current engagement aims at mitigating risks of human rights and labor violations occurring along oil-related supply chains. The best-known global attempt to improve supply chain integrity and visibility in the oil sector is the Extractive Industries Transparency Initiative (EITI).[65] Under the EITI, participating countries, companies and civil society organizations agree to a Statement of Principles to increase transparency over payments and revenues in the extractive sector that includes oil, gas and natural resources. Members of EITI commit to disclose information along the extractive industry value chain, from how extraction rights are awarded to how revenues make their way through government and how they benefit the public. Through participation in the EITI, more than 50 countries have agreed to a common set of rules governing what has to be disclosed and when, i.e. the EITI Standard.[66]

Individual oil companies have also launched programs and corporate strategies to reduce the risk of illegal labor practices. The human-resources policies of most companies contain detailed provisions safeguarding the interests of employees, consultants and agents against human rights abuse. An EU study on supply chain due diligence, from January 2020, suggests that many oil and gas companies are making progress towards implementing the UN Guiding Principles on protecting human rights throughout supply chains.[67]

Company-specific initiatives include:

- **British Petroleum's OneCSR.** In 2020, British Petroleum (BP) implemented a pilot project – OneCSR – to collect site-level data on social, human rights and labor rights performance for a sample of businesses, with a view to better understand the scope of human rights violations in the industry. As mentioned in Section 3.4, the initial data

indicated that out of the 17 sites and businesses reporting on labor rights and modern slavery risks through OneCSR, 65% had identified labor rights issues through their ongoing monitoring activities. This included wages and deductions, employment terms and working time. Where found, these issues were raised with the relevant contractor and corrective actions were agreed upon.[68] Additionally, in 2019 BP launched the BP labor rights and modern slavery (LRMS) principles. The company is now driving these principles into action by applying them to higher risk contractors and suppliers.[69]

- **Shell's labor /human rights systems.** In Shell's supply chains, all direct suppliers undergo pre-contract screening, including against sanctions lists and adverse media checks where evidence of modern slavery and human rights abuse could be identified. Contractors and suppliers deemed to be at higher risk for labor rights issues are engaged to undertake a detailed assessment of their labor rights management system prior to the award of a contract. Shell has also worked with the Norwegian Oil and Gas Operators Association, NOROG, to include an addition to their Joint Qualification System that allows the sharing of completed supplier assessments.[70] The results of these supplier assessments performed by Shell's procurement team are summarized in a rating depending on the number and significance of any gaps between Shell's requirements and the supplier's policies or performance. Where gaps are found, the procurement team may work with suppliers and contractors to help them implement corrective action.[71]

Protecting oil supply chains from illicit operations

In addition to policies aimed at mitigating the risk of human rights and labor abuses, industry actors implement processes to ensure that oil products stemming from potential suppliers do not derive from fraudulent or other illicit operations. Refineries, in particular, implement different degrees of due diligence depending on size, nationality, budget and locations. Interviews conducted by Chatham House on the subject of due diligence practices in force at refineries buying Nigerian crude oil highlighted that "how strictly a refinery vets purchases can depend on the company's reputational exposure, management culture, private versus publicly traded status and history with higher-risk deals."[72]

Common steps for approving new crude sellers include checking sellers' ties to the political establishment, incorporation papers, annual accounts and director lists as well as contacting terminal operators to ensure that the cargo in question is actually on the terminal's monthly loading schedule in the same size as offered. Accordingly, "the most common worry with Nigerian crude is that the offered shipment is '419', meaning it does not actually exist. The usual signs of 419 include contradictory, error-ridden paperwork; a seller using Gmail, Yahoo or other non-corporate email addresses; too-good-to-be-true discounts; unknown sellers with no obvious political ties; irregular deal terms; and requests for advance payment."[73]

At the same time, interviews realized for the Chatham House report showed that due diligence processes may not always be as effective as they should, due to some larger refiners splitting parts of the due diligence process between different departments (e.g. trading, shipping, refining and insurance) and these departments failing to establish fluid communication flows with each other.

6.2 Business driven technological solutions

The private sector leverages an array of tools to increase supply chain transparency and product traceability. Some of these tools take advantage of a number of cutting-edge technological solutions such as:

- **Molecular Fuel Marking.** It currently represents one of the most effective technological solution against smuggling, siphoning and adulteration. While dyes have been used for decades to mark fuel (more often in order to distinguish between products subject to different tax regimes than to thwart illegal behavior), an EU study on downstream oil theft demonstrates that dye can be removed by illicit actors looking to profit off "laundered" fuel. Molecular markers, however, are far more sophisticated as they not visible to the naked eye.[74]
- **Tracking Tankers.** Monitoring the movement of tankers helps reduce the opportunities for illicit activity and is most effective when used in conjunction with a molecular marking scheme. Illegal sales and other off-the-books activities are detectable by irregularities in truck movements. While tampering with and manipulating GPS-based vessel identification systems remains a possibility and a number of cases have been reported in the media, the presence of trackers installed onboard ships constitutes a first important line of defense.[75]
- **Metering and Monitoring.** One of the ways in which fuel "disappears" is by the use of outdated, inaccurate and ineffective meters and monitors on pipelines and at storage facilities. Mandating accurate meters and monitors could immediately help confirm how much fuel is being lost, where and when it is being stolen and, therefore, what can be done to stop it.[76]
- **Cameras.** Use of recorded and/or live feed cameras can help reduce fuel theft at vulnerable points. Drones and fiber optic sensors in pipelines can also be used to track oil theft.[77]
- **Electronic Documents.** A substantial source of oil theft by fraud occurs through use of falsified transport documents, both overland and by sea. Standardized electronic documents with counter fraud measures could significantly help reduce the amount of refined oil stolen in transit.

7. Recommendations

The following are focused recommendations to help combat illicit trade in oil by governments and private-sector entities:

- **Introduce high standards for oil theft mitigation measures.** Organizations like ISO could help create standards to ensure that countermeasures—such as tracking, tracing, metering, filming, and documenting —meet certain minimum requirements. While ISO certification for companies would likely raise the price of implementing mitigation measures on account of audit costs, mandating standards compliance would ensure a higher quality in efforts to reduce illicit fuel activity.[78]
- **Consider the abolition of fuel subsidies.** As witnessed in Nigeria in recent times, abolishing fuel subsidies inhibits incentives for fuel smuggling, as price differentials are removed. Further, placing appropriate fuel pricing mechanisms and ensuring cross border fuel price equalization can reduce transnational demand for smuggled fuels.[79]
- **Strengthen supply chain due diligence.** The oil industry stands to benefit from increased transparency about the origin of its products. Understanding how other extractive industries carry out due diligence processes could provide important lessons and support in the development of workable schemes. Each stakeholder in the oil market should conduct detailed commercial due diligence on suppliers, buyers, traders and individual oil cargoes. Vertically integrated oil companies and large refining companies should deploy in-house due diligence methods on any crude oil purchases for their refineries.[80]
- **Stimulate the growth of the insurance market against oil theft.** Increasingly, insurance providers offer policies and products against oil theft. A steady growth of the insurance market may incentivize private companies that decide to purchase insurance policies to adopt proactive mitigation approaches (including, notably, through increased due diligence efforts) as a means to reduce insurance premiums.[81]
- **Strengthen regulatory frameworks for private security.** Private security companies are major employers in many countries. Moreover, private security guards often outnumber law enforcement officers by significant margins and perform key roles at various nodes of the oil supply chain. Domestic regulation for this industry could be tightened and proper working conditions offered to its employees as a way to reduce incentives for engaging in illicit activity.[82]
- **Strengthen personnel recruitment policies.** Rarely can organized crime be successful in its attempts to divert oil from legitimate supply chains without the collusion of oil companies' personnel in terms of providing access to sensitive data, information about weak points or processes, etc. This "insider threat" highlights the need for oil companies to leverage human resources management as a key tool to prevent the recruitment of elements associated with criminal groups or susceptible to criminal influence (e.g. running comprehensive background checks on the profile of prospective employees).
- **Enact stronger licensing regimes.** Countries should consider licensing regimes for any of the service providers involved in the oil sector. While distribution centers are already frequently licensed, their oversight could in many cases be enhanced to prevent system abuses. Fuel truck drivers could also be subject to licensing schemes to allow for greater vetting of drivers and banning of those who have been found to engage in illicit activity. The private security industry could be subject to special licenses as a prerequisite to engage security companies in protecting specific oil-related infrastructure such as storage and distribution facilities.[83]

- **Collect and analyze more and better data.** Larger and more accurate datasets are needed to understand how illegal oil supply chains work across countries and regions. Significantly more data are also needed to shed light on financing and payment mechanisms linked to illicit oil supply chains, including cryptocurrency and other alternative forms of payment.

  The information-gathering priorities identified by Chatham House to mitigate to oil theft in Nigeria should also be considered by policy-makers of other oil-producing countries.[84] Intelligence should notably be collected on:

  - **Volumes of stolen oil.** Volumes are often difficult to assess due to poor measurement practices, doubts as to the quantity of stolen oil vis-à-vis oil that is being spilled, how much oil is exported as opposed to refined locally, etc.
  - **Movements of stolen oil.** As has been suggested "crude oil can move in complex ways. Buyers load multiple parcels of crude onto single ships, or transfer oil between ships. Others blend different grades of oil and place large quantities in storage. None of these moves are suspect per se, but oil thieves can use them to launder stolen oil into the licit market."[85]

  Understanding the path followed by crude oil requires the development of sophisticated intelligence-gathering capabilities. To acquire a full picture of illicit networks and dynamics, information stemming from several datasets and human sources need to be leveraged, shared and cross-checked. This may include information that legitimate oil traders often receive from suspicious dealers wishing to place their products.[86]

- **Enhance maritime law enforcement capacities.** Given that the maritime routes represent by far the most used transport channel for illicit oil, empowering maritime law enforcement is critical. This includes improving the ability of domestic law enforcement agencies to address illegal conduct taking place at sea, such as illegal ship-to-ship transfers, use of offshore facilities to launder oil and ship hijacking for oil-stealing purposes.

- **Leverage technology-based solutions.** The increasing use of technology in all aspects of the oil supply chain – from drilling to transporting to refining to selling to protecting the industry – is becoming ever more susceptible to cyber interference. To reduce this risk, cyber security protective measures must become an indispensable component of the legitimate marketplace.[87]

  Law enforcement agencies and industry stakeholders also need to leverage technology for the purpose of monitoring and tracking vessels suspected of carrying illicitly traded oil. For satellite tracking to work properly, however, it is important for domestic agencies running parallel surveillance systems to coordinate their programs and share satellite-generated information. Also, surveillance hardware and capacities often need to be improved. At the same time, it should be recognized that GPS monitoring systems and other technological solutions can only deliver results to the extent that human-intensive analytical work and interaction is carried out, especially for information-sharing purposes.

As the case of Nigeria shows, "choosing which ships to watch on the high seas would be hard if Nigeria did not share intelligence about events in its own waters. Complex transport arrangements could cause trails to go cold. Ships also have easy ways to hide in plain sight – switching off their Automated Identification Systems (AIS) transponders being the simplest.

- **Protect oil-carrying vessels against robbery.** Shipping companies engaged in oil cargo transport should systematically review their ship security plans and standard operating procedures by complying with international instruments such as the International Ship and Port Facility Security (ISPS) Code. This includes, among others, the installation of physical ship protection measures, crew screening, conduct of crew briefing/training and maintaining confidentiality of the voyage route whenever possible.

  The shipping industry should also keep abreast of the latest situation in the region(s) where they operate, especially those that are known to me most subject to hijacking operations, and, to the extent possible, avoid planning their voyage through vulnerable areas or take specific precautionary measures.[88]

- **Expand the range of charges against illicit oil traders.** Criminal justice authorities often have a wide range of criminal charges at their disposal to prosecute oil traffickers. Depending on the circumstances and context of each case, charging options worth exploring include smuggling, corruption, money laundering, piracy, pillage, environmental degradation, etc.

- **Follow the "illicit oil" money**. The illicit oil trade generates considerable proceeds that traffickers launder through a variety of mechanisms including bulk cash smuggling, use of middlemen/ facilitators, shell companies and tax havens, bribery of bank officials, cycling cash through legitimate businesses and cash purchases of luxury goods.[89]

  Following the illicit "oil money" is a time- and resource-consuming activity due to, among other factors, the strong cash-based nature of this form of illicit trade. However, it is critical for governments to invest in the establishment of pools of dedicated financial investigators to maximize the chances of building successful financial cases leading to identification, freezing and forfeiture of illicit financial flows.

  Investigators' task could be greatly facilitated by the enactment of new financial-sector regulations aimed at, for example, creating registries of beneficial owners, placing limits on the use of shell companies, etc.

- **Invest in consumer education and awareness raising**. While the illicit oil trade is a widespread phenomenon, information about its negative impacts hardly reaches the general public. Consumers tend to be significantly more "sensitized" about other forms of illicit trade such as wildlife crime and issues associated with minerals' illegal extraction (e.g. "blood diamonds"). More effort is thus needed from academia, think tanks and the news media to uncover the situation on the ground. Education and outreach campaigns should inform the public at large about full extent of the problem and its social, economic and environmental consequences.[90]

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VII. PHARMACEUTICALS

1. Overview and findings

Illicit pharmaceuticals' trade dynamics

What is illicit pharmaceuticals?

Illicit pharmaceuticals fall in the following categories:

Substandard (also called "out of specification"). These are authorized medical products that fail to meet either quality standards or specifications, or both.

Unregistered/unlicensed medical products. They have not undergone evaluation and/or approval by the National or Regional Regulatory Authority for the market in which they are marketed/distributed or used, subject to permitted conditions under national or regional regulation and legislation.

Falsified medical products that deliberately/fraudulently misrepresent their identity, composition or source.[1]

Illicit pharmaceuticals are estimated to cause one million deaths annually and contribute to serious public health crises. Absence or reduced levels of active ingredients in anti-infective medicines and combination drug therapies can lead to microbial resistance and more virulent strains in addition to failing to treat the disease. The situation is aggravated in developing countries, which are already challenged with combating high rates of infectious diseases, such as malaria, tuberculosis, and HIV, and face even greater difficulties when common therapies fail to treat new strains. In addition, illicit pharmaceuticals, when provided unwittingly by governments, undermine the public's confidence in health systems.[2]

It is critical to recognize that illicit pharmaceuticals are not only "lifestyle" medicines (e.g., to address erectile dysfunction, support dietary regimens), but also "lifesaving" products such as those used to treat cancer, heart disease and other serious conditions. Moreover, the problem extends to both branded and generic versions of prescription drugs and is exacerbated by the spread of unscrupulous online pharmacies. Often, these offer access to prescription-only medicines, which allows reckless patients to bypass the nuisances of consulting a doctor who may well refuse to order a certain treatment.

The COVID-19 crisis has heightened the dangers posed by the global trade in illicit pharmaceuticals. According to the World Health Organization (WHO), a growing volume of fake medicines linked to the coronavirus are on sale in developing countries, and INTERPOL has also seen an increase in fake medical products related to COVID-19.

Seizures of fake COVID-19 tests and personal protective equipment such as facemasks and hand sanitizers have been reported by several customs agencies and the World Customs Organisation (WCO).[3]

The following are some key figures related to illicit trade in pharmaceutical products:

- The fake drug business is estimated at USD 200 billion per year.[4]
- The WHO estimates that the share of illicit medicines on the market ranges from less than 1 percent of total sales in developed countries to over 10 percent of total sales in developing countries.[5]
- According to a report by PwC, roughly one-third of the world's countries lack effective drug regulatory agencies, making them easy prey for counterfeiters.[6]
- Industry research shows that more than half the illicit pharmaceuticals sold today are fraudulent versions of treatments for such life-threatening conditions as malaria, tuberculosis, HIV/AIDS, and even cancer.[7]
- Counterfeiting concerns all forms of pharmaceuticals, from painkillers to vaccines, destined to markets in developing countries, particularly those in Southeast Asia and Africa. Average market penetration of counterfeits is 30 percent but increases to more than 60 percent for antimalarials in some countries.[8]
- A Pfizer-sponsored study, one of the largest investigations conducted in 14 European countries, estimated that people in Western Europe spend more than USD 14 billion a year on illicitly-sourced drugs, many of them counterfeit.[9]

2. Modus operandi

2.1 Supply chain modalities

Supply chains for pharmaceutical products can be extremely complex. Manufacturers often sell directly to wholesalers. A range of intermediaries – brokers, secondary wholesalers, actors in the repackaging industry - are frequently involved before the product reaches consumers. Only in the U.S., the loosely regulated secondary market is comprised of about 7,000 firms that purchase excess stock from wholesalers, pharmacies and sometimes unscrupulous brokers and resell.[10] Moreover, "nearly 40 percent of the drugs Americans take are made elsewhere, and about 80 percent of manufacturing sites of active pharmaceutical ingredients used in drugs manufactured in the U.S. are located outside [its] borders – in more than 150 countries, many with less sophisticated manufacturing and regulatory systems […]. In addition to the sheer volume of imports and foreign facilities, there has been an increase in the variety of sources, shippers, methods of transportation and supply chain complexity of products."[11]

From a trafficker's perspective, every additional layer in the supply chain creates a new opportunity for introducing into or diverting illicit medicines from the distribution network. The fragmentation of the distribution process - and the easiness with which transportation documents can be forged - creates severe challenges for legitimate industry actors and law enforcement authorities in monitoring product origin and tracking its route.

Moreover, the wide availability of manufacturing equipment on Internet auction sites and the significant advances made by printing technology over the past two decades have significantly lowered the barriers to entry in the illicit market. As a result, no particular skills are needed to create fake pharmaceutical packaging that consumers would find virtually undistinguishable from the original one.[12]

2.2 Transport Dynamics

Those involved in the illicit trade of pharmaceutical products often orchestrate tortuous distribution schemes with the sole objective to obfuscate product origin and complicate detection efforts. One observed dynamic consists of transporting various components (e.g., packaging and ingredients) from different countries with the goal of assembling them into the complete product in the country of destination.

Illicit pharmaceuticals – or their components - are shipped by land, sea and air, either in large containers or small packages, and misusing modern logistical solutions such as express carriers or Free Trade Zones.[13] Mail and courier services are the main modes of transport for illicit pharmaceuticals traded worldwide, with their shares growing between 2011 and 2016.

Air

Although a majority of the smuggling happens by sea, transporting by air is valued at USD 213 billion, compared to USD 56 billion for sea freight. According to research by the Seabury Group, that value is increasing by 6 percent year-on-year, which makes the smuggling of illicit medicine by air a highly lucrative business.[14]

Maritime

Until 2014, the bulk of medicine travelling across borders was predominantly transported by sea.[15] However, since 2014, small parcels and postal systems have become the preferred mode of transport. In part, this shift can be explained by the fact that, although the risk of detection during sea transport may be low, when interdiction does occur losses on confiscated cargoes can be very large. By contrast, small shipments reduce the potential losses resulting from the discovery of an illicit trade consignment as only small volumes are confiscated each time.[16]

2.3 Hotspots

2.3.1 Online platforms

The Internet is providing an increasingly viable option for distributing pharmaceutical products – both legitimate and illicit – to domestic and international consumers. The ability of sellers to hide their identity and misrepresent their products is a particularly attractive option, providing them with a relatively easy point of entry into even the best regulated markets.

Creating professionally designed websites and – sometimes – the appearance that a virtual shop operates in a country with cheaper prescription drugs, are commonly used techniques to trick consumers into thinking that they are buying from a legitimate seller established in a country where medicines are legally sold at a discounted price.[17]

Illicit pharmaceuticals can be purchased online, both on the surface-web and the dark-web.[18]

And while some technologies are critical in tracking and tracing illicit pharmaceuticals, other technologies have the opposite effect. The anonymity offered by cryptocurrencies such as bitcoin, for example, makes the financial movements connected to illegal online transactions extremely difficult – if not impossible – to follow.[19]

A few studies have been conducted on the extent of online illicit markets for pharmaceuticals across regions. Some figures in this regard are below:

- According to the Alliance for Safe Online Pharmacies (ASOP), 100 percent of online searches for the phrase "buy medicine online" return links for illegal online pharmacies.[20]
- The WHO estimates that 50 percent of drugs sold online are fraudulent. Further, 90 percent of drugs purchased online come from a different country than the website claims.[21]
- The Centre for Safe Internet Pharmacies reports that 600 new illegal online pharmacies are launched every month, taking advantage of this ever-increasing market that has generated a staggering USD 11 billion.[22]
- A random sampling of 10,000 online pharmacies by the Food and Drug Administration of the U.S. (FDA) found 97 percent of them to be illegal or not conforming to the regulations.[23]

Spamming consumers is an easy, cheap and anonymous way to advertise online goods and it can reach a very large web audience. The large amount of spam messages sent with the intent of advertising illicit websites aims at finding potential victims who, in turn, could produce gains for criminal organizations operating behind the scenes. It is evident that spam messages do not only promote single products but are also often a way to promote an entire illicit website or an illicit chain of websites.

A spam message could consequently promote fake drugs, but also push receivers to visit the illicit websites where counterfeit medicines are sold. In this regard, when creating a rogue e-pharmacy or a fake e-pharmacy, criminals do their best to create an illicit website that resembles at the maximum a licit one, in view of reassuring those unaware buyers who are tempted to perform their purchase in the website. It is not rare that illicit online pharmacies try to mislead consumers by requiring a regular medical prescription in order to allow purchases from their website. This strategy has the sole purpose of duping potential buyers on the licit nature of the pharmacy, as eventually the request turns out not to be compulsory and the buyers can easily receive their shipment without any prescription.

Case study: From posts to pills: investigating illicit pharmaceutical advertisements on social media[24]

As part of a study conducted on the extent of the online drug market, the National Association of Boards of Pharmacy (NABP) in the U.S. found 66 posts promoting the sale of medications on the social media platform Pinterest. 38 percent of these posts provided links to websites selling prescription medicines illegally. Keyword searches performed on Instagram, Facebook, Twitter, Reddit and eBay garnered similar results. NABP also discovered links to rogue Internet drug outlets from posts on Instagram and Facebook that promote the sale of prescription drugs. Twitter posts, or Tweets, also promoted the sale of prescription drugs, and linked to rogue internet drug outlets that sell them. On eBay, advertisements were found for birth control pills, tretinoin, albuterol, and a pain relief product containing codeine. On Reddit, posts were found promoting the online sale of Adderall®, metformin, Xanax, and other prescription medicine without a prescription.

2.3.2 Free Trade Zones

The regulatory opacity affecting many FTZs and a general "hands-off" attitude on the part of customs and other law enforcement authorities in many countries offer an attractive playground for unscrupulous actors to engage in illegal conduct involving pharmaceuticals. Acting as trans-shipment points, FTZs are exploited by counterfeiters to repackage medical products and hide the country of departure, resulting in so called "origin laundering."

Case study: Behind closed zones: investigating illicit pharmaceutical trade through FTZ networks

In 2006, UK customs agents seized 384 kg of pharmaceuticals. Out of eight seized products, seven turned out to be counterfeits of brands belonging to Merck, Novartis, AstraZeneca, Pfizer and Procter & Gamble. The shipment was in transit from the Oyster Corporation, established in the Sharjah FTZ, Dubai, to Personal Touch Pharmacy, established in the FTZ of Freeport, Bahamas. A search warrant by the Royal Bahamas Police Drug Unit resulted in the seizure of several illicit drugs and uncovered a fulfilment center for Internet drug orders placed with an illegal on-line pharmacy based in Canada. The day after the raid in the Bahamas, suspect pharmaceuticals stored in the Sharjah FTZ were moved to an unrelated facility in the Jebel Ali Free Zone in Dubai, in an attempt to avoid further detection. The investigation would eventually unravel a complex supply chain of fake drugs that ran from China through Hong Kong, the United Arab Emirates, UK, and the Bahamas, ultimately to be sold online to customers as Canadian medicines. The Bahamas served as the place where prescriptions were filled and packaged. The goods would then be sent to the United Kingdom for final shipment to customers in the US, with the UK postage intended to assuage consumers' possible concerns about the reliable origin of the products. The persons involved in the operation were subsequently arrested.[25]

The same year, another criminal scheme was unveiled by Pfizer International, which discovered illicit products in the Euro Gulf Trading Co., located in the Jebel Ali Free Trade Zone. A complaint was filed, prompting an inspection by the General Inspection Department and the Investigations and Smuggling Control Section of the Dubai Seaports and Customs Authority. At the warehouse, inspectors found quantities of illicit goods, including pharmaceuticals, along with equipment used to print false production and expiration dates.[26]

2.3.3 Postal systems/express couriers

Mail and courier services are the main modes of transport for illicit pharmaceuticals traded worldwide. Postal systems saw a dramatic increase in the trade of pharmaceuticals between 2014 – 2016. The attractiveness of small shipments for these products has increased over time, benefitting from the explosive growth in e-commerce and the accompanying rise in cross-border transactions.

Use of small parcels is particularly well suited to counterfeiters of pharmaceuticals products, as shipments of both raw active ingredients and completed products can be quite small, easily fitting in bubble wrap letter packets, as well as small parcel boxes.

Case study: The secret trade: anabolic steroid couriers from Bulgaria to Spain[27]

In March 2015, an advert for medical products appearing on Facebook led the Spanish National Police to shed light on a criminal group composed of Bulgarian and Spanish citizens. The network was supplying large amounts of anabolic steroids to amateur athletes all around Spain through a clandestine factory located in Gandia, Spain. Courier services were used both to send the active ingredients to the manufacturing facility from Bulgaria and to subsequently deliver the final products to consumers following orders placed online.

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

Illicit trade in medical products attracts criminal networks of various nature and composition. These networks range from white-collar criminals to industrial wholesalers, international businesspersons, corrupt law enforcement officials, distributors and retailers. A substantive incentive for organized criminal groups to engage in the manufacture and distribution of pharmaceutical products stems from the high profits and comparably low risks generated by this type of business.

In developing economies where distribution channels are largely decentralized and unregulated, markets' informal nature enables organized criminal groups to act more easily than elsewhere.[28] At the same, field research conducted by RUSI confirmed that organized criminal groups dominate this type of trade in developing countries as well.[29] The sophistication of networks active in the EU is visible in the accuracy with which counterfeit medical products are assembled to make them look genuine, including with the replication of anti-counterfeiting security features such as holograms.

Case study: Cough syrup and speed: Nigeria's criminal enterprise[30]

In 2016, officers from the National Drug Law Enforcement Agency of Nigeria (NDLEA) swooped on the laboratory of a registered pharmaceutical company located in Enugu State. The company had a license for the importation of Ephedrine, one of the essential active ingredients for the manufacture of cough/cold drugs. To procure Ephedrine, the company obtained permission from Nigeria's Agency for Food and Drug Administration and Control (NAFDAC) to legitimately import the pharmaceutical ingredient from India. The NDLEA investigation revealed that rather than manufacture authentic cough/cold tablets, the company had diverted Ephedrine to produce methamphetamine. It also emerged that in order to abide by regulatory demands of NAFDAC to provide evidence of the legitimate use of Ephedrine, the company produced illicit cough/cold drugs which did not contain any active ingredient. A financial investigation on the company further revealed that 28 million Naira and USD 15,000 were deposited in the account of the company from the counterfeiting and illicit production of hard drugs.

3.2 Corruption

The European Union Commission stated in 2017 that the healthcare sector is particularly susceptible to corruption, with bribery in the pharmaceutical sector remaining one of the key challenges in the fight against corruption, especially in Eastern and Southern European Member States.[31] When institutions are weak and unable to regulate the pharmaceutical sector accurately, they increase opportunities for corruption, including at the manufacturing stage. For example, regulators may receive kickbacks to ignore makers of illicit products, or grant licenses to manufacturing facilities that implement sub-standard practices.[32] Bribing can involve wholesalers and distribution centers, providing another entry point for substandard and counterfeit drugs to pollute the supply chain.

Corrupt schemes may also occur further down the supply chain. Customs agents may be paid to turn a blind eye to illegal cross-border transactions for medical products. But also, as revealed by a seminal study conducted by Transcrime on the theft of medicines from Italian hospitals, organized criminal groups may be "committing serial thefts and relying on a large availability of funds and cash that they can use to corrupt the medical staff of hospitals or to pay underground couriers."[33]

3.3 Forced Labor

The enormous demand and supply that exist globally for illicit pharmaceuticals has created significant room for the exploitation of forced labor and the commission of other labor-related violations. These phenomena are likely to have increased as illicit traders have flooded the world with fake products and remedies to COVID-19. For example, in the UK it was reported that "the fake masks are often made in unsterile sweatshops previously used to make phoney handbags or designer jeans."[34]

Case study: The underbelly of Indiana: Forced labor and counterfeit Viagra[35]

In March 2020, an investigation by the Indiana State Excise Police, US Department of Homeland Security and the Madison County Drug Task Force into the sale of fake Viagra, resulted in the arrest of two men on felony charges of money laundering and dispensing a prescription drug illegally. Offences associated with human trafficking and forced labor were also investigated after agents who are trained to identify typical signs of such crimes observed people's refusal to answer questions in relation to personal identification and extreme nervousness around the presence of law enforcement.

3.4 Money Laundering

As financial gain is the motivation underlying the involvement of organized criminal groups in illicit trade operations involving pharmaceutical products, money laundering is what enables them to take advantage of those financial gains. In particular:[36]

- Proceeds obtained from the manufacturing/distribution/sale of illicit pharmaceuticals may be laundered in a legitimate activity with a view to conceal the initial crime.
- Proceeds from illegal activities of various nature may be laundered in the counterfeiting of pharmaceuticals to create a front for a legitimate pharmaceutical product, which, in fact, is not legitimate.

- Proceeds obtained from the illicit trade in pharmaceuticals may be re-invested in the same business with a view to sustaining and extending the activity.
- Proceeds obtained from transactions involving illicit pharmaceuticals may be re-invested in other criminal activities (e.g., arms and drug trafficking, illicit trade of tobacco products).

4. Impact on the UN Sustainable Development Goals

Illicit pharmaceutical products have both direct and indirect adverse effects on the SDGs. Below is a brief summarization on how these might be affected.

- **SDG 1.** *No poverty.* It is often the poorest and most vulnerable in society who are tempted by the prospect of cheaper substandard and falsified medical products. Yet, in the long run, this leads to increased health care costs when a substandard or falsified product are without effect, thereby perpetuating a vicious cycle of poverty and poor health.
- **SDG 3.** *Good health and well-being.* When consumers and patients ingest medicines that have little to no medicinal value, the severity of the associated health risk can range from inconvenience to fatality. Falsified, sub-standard medicines also have a worrisome impact on antimicrobial resistance (AMR), where multi-resistant strains of some of the world's biggest diseases, such as tuberculosis and malaria, are becoming a serious global public health threat.
- **SDG 5.** *Gender Equality.* Illicit pharmaceuticals undermine women's health by limiting access to safe and reliable contraception and degrades the integrity of health and family planning programs.
- **SDG 8.** *Decent work and economic growth.* Substandard and falsified medical products undercut efforts to reduce the burden of disease, thereby undermining investments in public health systems and causing a significant negative impact on economic growth, sustainable development and productive employment. For the individual, consequences include prolonged illness, time away from work, increased health care costs, potentially longer-term health complications and even premature death.
- **SDG 9.** *Industry, innovation and infrastructure.* Illicit trade in pharmaceuticals undermines investment in R&D of new drugs and the pervasiveness of spurious drugs has a negative impact on pharmaceutical innovation and access to affordable medicine. The more a market is invaded by spurious pharmaceuticals, the less inclined is the private sector to make investments in new drugs.
- **SDG 12.** *Responsible consumption and production.* Since illicit traders do not meet environmental protection standards and reduce chemical waste and other hazardous materials in their production processes, this results in improper disposal of waste and other toxic chemicals thereby having an adverse impact on the environment through irresponsible production.
- **SDG 16.** *Peace, justice and strong institutions.* Illegal proceeds from illicit pharmaceuticals finance organized criminal activity and threaten lives, social stability and peaceful communities.

5. Institutional framework

This section features a selection of some of the most relevant and innovative initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses World Health Organization

Guidelines for the development of measures to combat counterfeit drugs

These guidelines aim to assist Member States in preventing counterfeit medicines from entering legitimate pharmaceutical channels. They contain provisions for national drug regulatory authorities to assess risk, identify and deal with counterfeits. They also provide training programs for personnel.[37]

IMPACT

In 2006, the WHO set up a working group known as International Medical Products Anti-Counterfeiting Taskforce (IMPACT), with the aim of coordinating international activities for combating illicit medical products. It comprises 193 WHO members serving as volunteers as well as international organizations (such as INTERPOL), inspection services, national drug authorities, customs organizations and the police, Non-Governmental Organizations and manufacturing representative associations, wholesalers, health professionals and patients (FIP, International Alliance of Patients' organization).[38]

Global Surveillance and Monitoring System

Launched in July 2013, the Global Surveillance and Monitoring System aims to support Member States in improving the quantity, quality and analysis of data concerning substandard and falsified (SF) medical products. Specific goals are to:

- Improve reporting of SF medical products.
- Assess more accurately the scope, scale and harm caused by SF medical products.
- Provide immediate co-ordination and technical support in emergencies.
- Issue medical products rapid alerts.
- Gather and analyze a detailed body of validated evidence for Member States to enable evidence-based policy making and investment.
- Strengthen regional and national regulatory capacities to prevent, detect and respond to SF medical products.

In 2017, the WHO counted more than 300 regulatory authorities and 113 Member States having reported 940 SF medical products since the system was first established. Critically, "the system allows trained authorities to search this database via a secure link to gather further information about an alleged SF medical product that may have already been reported by other authorities."[39]

INTERPOL

Operation Pangea

Launched in 2008, Operation Pangea is a well-established INTERPOL-led effort to disrupt the advertisement, sale and supply of illicit medicines and medical devices threatening worldwide public health and safety. Operation Pangea also works to raise awareness of the risks associated with buying medicines from unregulated websites. Supported by the Pharmaceutical Security Institute, UNOCD/WCO's Container Control Programme and EUROPOL, the operation has resulted in the seizure of around 9 million medical devices and illicit pharmaceuticals, including hypnotic and sedative medication, erectile dysfunction pills, medical devices analgesics/painkillers, anabolic steroids, antiseptics and germicides, anti-cancer medication, anti-malarial, vitamins.[40] In total, almost 120,000 websites have been scrutinized and 113,000 of them have been closed down.[41] During the COVID-19 pandemic, fake and unauthorized testing kits accounted for more than half of all medical devices seized during a week-long operation, which resulted in 277 arrests worldwide and the seizure of potentially dangerous pharmaceuticals worth more than USD 23 million.[42]

Case study: Pandemic profiteers: organized crime's response to COVID-19[43]

The outbreak of the coronavirus disease has offered an opportunity for fast cash for criminals bent on exploiting the high market demand for personal protection and hygiene products. Law enforcement agencies taking part in Operation Pangea found 2,000 online links advertising items related to COVID-19. Of these, counterfeit surgical masks were the medical device most commonly sold online, accounting for around 600 cases during the week of action. The seizure of more than 34,000 counterfeit and substandard masks, "corona spray", "coronavirus packages" or "coronavirus medicine" only revealed the tip of the iceberg regarding this new trend in counterfeiting.

Qanoon

Qanoon is an INTERPOL-led multi-year initiative targeting illicit medicines and medical products in the Middle East and North Africa region. The initiative collects and shares information in order to identify transnational issues, support investigations and dismantle criminal networks. It also works to create a pool of experts (police services, health, customs agencies, judiciary and the private sector) to support sustainable cooperation and actions. The countries participating in the initiative include Algeria, Bahrain, Egypt, Iraq, Jordan, Kuwait, Libya, Lebanon, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Tunisia and United Arab Emirates.[44]

Council of Europe

Medicrime Convention

In 2010, the Council of Europe (CoE) adopted a criminal law instrument on "counterfeiting of medical products and similar crimes involving threats to public health" (Medicrime Convention). The Medicrime Convention's objectives are to criminalize certain acts, protect

the rights of victims and promote national and international co-operation. Its scope extends to medicines (for human and veterinary use), their active substances, excipients, and medical devices, parts or materials designated to be used in the production of medical products, and accessories designated to be used together with medical devices.[45] In force since 2016, as of January 2022 the Medicrime Convention had been adhered to by 18 States. Although it was adopted under the aegis of a regional organization, the Medicrime Convention is open to ratification by non-CoE Member States that have participated in its elaboration, enjoy observer status with the CoE or upon invitation. The Medicrime Convention thus has the potential to become a universally ratified instruments setting globally binding standards for international cooperation in criminal matters relating to illicit trade in pharmaceutical products.

European Union

EU Falsified Medicines Directive

In force since 2013, the Directive introduces harmonized measures for EU Member States with the aim to:

- Applying a unique identifier and an anti-tampering device on the outer packaging of medicines.
- Applying a common EU-wide logo to identify legal online pharmacies.
- Implementing tougher rules on the import of active pharmaceutical ingredients.
- Strengthening record-keeping requirements for wholesale distributors.

The Directive has provided the basis for several legislative implementation measures adopted by the European Commission (e.g., on how medicine authenticity should be verified and by whom, on principles and guidelines of good manufacturing practice for active substances, etc.).

5.2 Selected national responses

NABP's ".Pharmacy" Programme

Implemented by the U.S. Association of Boards of Pharmacy (NABP), the ".pharmacy" domain name identifies legitimately operating pharmacies and pharmacy-related entities by incorporating the "seal of approval" into the domain name. By looking to the right of the dot for the ".pharmacy" extension in a web address, patients can be assured they are visiting a safe and legally operating website. NABP grants use of the ".pharmacy" domain only to legitimate website operators that adhere to pharmacy laws in the jurisdictions in which they are based and in which their patients and customers reside. Technology companies including Google, Bing, Yahoo!, Twitter, and Snap rely on NABP's website verification process to ensure that their pharmacy- and prescription drug-related advertisers are operating lawfully.[46]

2005 Amendments to the Florida Drugs and Cosmetics Act

In 2005, recognizing the increase of illicit pharmaceuticals, the State of Florida passed a legislative bill to establish a "pedigree" for each drug sold in the state. The intention of the bill is to verify authenticity and reduce the chance of counterfeit. The new legislative framework amended the Florida Drugs and Cosmetics Act by imposing more stringent

regulations on prescription drug wholesalers. It created criminal offenses relating to illicit activities involving diverting prescription drugs from wholesale distribution. It also revised record keeping requirements for prescription drug wholesalers that are authorized distributors of record (ADR) of a drug manufacturer.[47]

Amendments to the India Drugs and Cosmetics Act

In 2011, the Drug Controller General of India proposed an amendment to the Drugs and Cosmetics Act, mandating that every drug manufactured in the country should have a Unique Identifier Code and 2D bar code on each pack, whereby their authenticity can be verified through an SMS. There is a similar mandate for medicine packs manufactured in India for export. For such initiatives to work, law enforcement agencies must have adequate technical expertise to identify fake goods by using advanced technology.[48]

China's regulatory landscape

As one of the biggest markets for illicit pharmaceuticals, China has introduced several legislative provisions covering the following subjects:

- Online sales restriction. It is illegal to sell prescription medicine online in China.
- Prescription requirement. Within China, prescription medicine must be dispensed, purchased, and used with a prescription issued by a licensed doctor or a physician.
- Pharmacy licensure requirement. Entities that dispense medicines in China must be licensed with a Drug Supply Certificate approved by the local drug agency.
- Medicine registration requirement. Medicines sold in China must be registered in China.
- Importation requirement. Drug importation is strictly regulated. The importation of medicines must be approved by the related administrative department under the State Council, and an import certificate is issued upon approval.
- Controlled substances. Within China, controlled substances are regulated as psychotropic drugs and narcotic drugs.
- Telemedicine/internet hospital. Licensed medical institutions are allowed to conduct online examinations in China. Accordingly, an internet hospital must partner with a licensed medical institute. Doctors and nurse practitioners must be licensed in China. Online diagnoses can be made for recurring patients. However, first-time diagnoses are not allowed to be conducted online. In general, doctors are allowed to prescribe medication for common diseases and chronic diseases. Controlled substances are not permitted to be prescribed online.[49]

UAE's TruScan Analyser

Recently, the United Arab Emirates (UAE) Ministry of Health and Prevention rolled out a state-of-the-art tool to detect illicit or low-quality drugs at transit points. Called TruScan RM Analyser, the technology comes in the form of a light carry-on device that can perform accurate, reliable and rapid verification of a broad range of chemical compounds. The device was rolled out between Abu Dhabi Airport and Abu Dhabi Port, and the border ports in Al Ain and Dubai International Airport, along with plans to station more drug inspectors to prevent the distribution of illicit drugs across the UAE.[50]

Malaysia's policies and international outreach

Key initiatives implemented by the Government of Malaysia over the past few years include:

- Comprehensive regulatory system for medicines registration;
- Effective use of MeditagTM security holograms, a tool for product authentication;
- Continuous enforcement activities and implementation of consumer awareness campaigns throughout the country;
- Close involvement of domestic regulatory and enforcement agencies within international initiatives such as: INTERPOL-led operations, international forums and dialogues organized by NGOs (Drug Information Association, Reconnaissance International, etc.), WHO-led study on the existence of counterfeit products and initiatives to eradicate substandard/spurious/falsely labelled/falsified/counterfeit (SSFFC) medicinal products.

In 2013, in recognition of the policies enforced and the achievements obtained in protecting the public from dangerous and counterfeit medicines, the Global Anti-Counterfeiting Group Network (GACG) presented the Government of Malaysia with the "Global Anti-Counterfeiting Award 2013."[51]

Case study: NABP's fight for safe medications in the age of social media[52]

As a follow-up to its study conducted on the online sale of pharmaceuticals, NABP (National Association of Boards of Pharmacy) has been working with social media companies to protect consumers from fake pharmacies. One example is Twitter's and Snapchat's requirement that advertisers of pharmacies and pharmacy products must be verified by NABP. The rogue sites discovered through NABP's evaluation of social media platforms are now included in its list of Not Recommended Sites, along with more than 11,000 drug sites NABP has found to be operating out of compliance with US federal and state pharmacy laws and practice standards.

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

- **Consumer education.** Industry stakeholders implement a wide range of initiatives to cultivate consumer awareness of the dangers of illicit pharma products, particularly those sold via online platforms. Pfizer, for example, implements a campaign called 'Fight the Fakes' with a dedicated website to enable people to share stories of how their lives have been affected by illicit medicines. The website also serves as a resource for organizations and individuals who are looking to support this effort by outlining opportunities for action by sharing information and factsheets on sub-standard and falsified medicines for consumer awareness building and sharing what others are doing to fight fake medicines. This campaign posts periodic updates and news bulletins of conferences and information on illicit pharmaceuticals around the world.[53]

- **Due diligence.** Companies in the sector have adopted extensive policies to execute due diligence on third-party contractors. Under its "responsible sourcing" policy, for example, Sanofi works closely with suppliers in selecting goods and services to ensure that they are produced and distributed in compliance with the environmental, social, and ethical standards set out in its Suppliers' Code of Conduct. As another example, Novartis implements Third Party Risk Management (TPRM), through which it manages risk when interacting with third parties.[54] TPRM is built around four clusters:
  - **Initiate and identify.** Every new third party, including existing ones offering new services, undergo risk assessment before any commitment is made. Third party data is entered in the centralized TPRM tool.
  - **Assess risk.** This is carried out on the basis of criteria such as the type of goods or services provided and country of origin.
  - **Remediate and contract.** If a potential risk is identified, a remediation plan is developed to mitigate the risk. In some cases, no engagement is taken with the third party.
  - **Monitor and assess.** The third party is monitored throughout the relationship lifecycle and reassessed after a maximum period of three years.

  Novartis's "Third Party Code" commits suppliers, distributors and wholesalers to comply with a set of principles related to, among others, ethics, human rights, labor rights, health and safety. The Code crucially upholds the Principles for Responsible Supply Chain Management, developed by the Pharmaceutical Supply Chain Initiative (PSCI).[55]
- **Monitoring and investigations.** Companies interviewed for this study reported carrying out proactive and reactive investigations both offline and online and co-vigilance for counterfeits and sub-standard pharmaceuticals. An important aspect of companies' action is notification to law enforcement.

Case study: The Center for Safe Internet Pharmacies (CSIP)[56]

CSIP is a nonprofit organization founded in 2011 by a diverse group of Internet service providers and technology companies to address the global problem of consumer access to illegitimate pharmaceuticals from illegal online pharmacies and other sources. These fake Internet pharmacies often advertise in deceptive ways and provide consumers with potentially dangerous counterfeit medicines.

Thanks to the work of CSIP, consumers and medical professionals who previously had few resources to understand the scope of the problem or the potential dangers from purchasing pharmaceuticals from these illegal pharmacies now have ways to verify the certification of their online pharmacy, to report illegal online pharmacies or counterfeit pharmaceutical products, and to become educated about these issues.

In addition to being a clearinghouse for certified safe online resources for medicines and assistance with opioid addiction, CSIP also collaborates with its members and partners in global law enforcement to ensure that those involved in manufacturing or selling counterfeit medicines are apprehended and illegal online pharmacies are stripped of their abilities to transact online or be found by unsuspecting consumers.

- **Testing.** "Testing the packages" is used as a way to prevent illicit products from entering the supply chain or rapidly identifying incidents if safeguards are breached.

6.2 Business driven technological solutions

Pharmaceutical companies are working on an array of technological solutions to prevent illicit medicines from slipping into the supply chain. To gain visibility, many manufacturers are applying new approaches to turn linear supply chains into intelligent and nimble digital supply networks. Similar in concept to social networks like Facebook, these business networks are creating breakthrough results, because all parties on a single platform can easily share data.[57]

Various types of technologies are being implemented across the supply chain to ensure integrity. These include:

- **Blockchain.** Blockchain is an area that large pharma companies and distributors have been exploring for a number of years, although its potential has not yet been fully realized. The attractiveness of blockchain is its ability to maintain data integrity, which makes it especially useful to ensure the necessary verification at different points in the supply chain.[58]
- **'Mass Serialization' and 'Track and trace'.** Mass serialization encodes each drug package with a unique identifier, usually a scannable barcode. Manufacturers can use linear, two dimensional, or radio frequency identification (RFID) coding. As each package comes off the production line, its identifying code is entered into an online database. With track-and-trace technologies such as handheld scanners, containers can be monitored and checked against the database at each point in the value chain, from manufacturer through wholesaler, repackager, and pharmacist. Unfortunately, weaknesses in the system leave the supply chain vulnerable to counterfeiters. The EU's Falsified Medicines Directive requires drug companies to adopt mass serialization and other anti-counterfeiting measures starting in 2019. Manufacturers operating in the E.U. have to add unique identification numbers to the outer packaging of all prescription drugs and equip containers with tamperproof seals.[59]
- **Spectometric sensor technology.** This technology can support local health authorities to detect falsified medicines. Authentifield by Novartis has been employed since 2019 as part of a pilot program which has, to date, deployed 40 devices in 14 countries, mainly across Africa but also in South Asia and Latin America.[60]

Case study: Pfizer's commitment to transparency: Serialization in Hong Kong

Pfizer found that sales of their blockbuster drug Viagra were being undermined in Asian markets by major counterfeiting operations. In Hong Kong alone, approximately 40 percent of Viagra sales were found to be counterfeit.

To expose the fakes and increase the sales of the authentic drug, Pfizer turned to Kezzler's serialization technology. Kezzler applied both visible and non-visible codes, which were unique, secure, and traceable, to each pack of Viagra at the distribution centers, avoiding packaging lines completely to speed the serialization process. Full implementation took place within a few weeks of the printing and approval of the first batch of labels. The codes enabled consumers, Pfizer, and other supply chain stakeholders to verify every pack's authenticity with a scanner, but a major challenge was educating consumers on how to use the new security feature. However,

Kezzler introduced QR and Datamatrix codes to the package design, allowing consumers to use a smartphone to verify authenticity in a matter of seconds. Launched in 2012, this project has since expanded to several more products and countries in Asia, for which the Pfizer team also won a Commercial Innovation Award. Currently, Kezzler has integrated their online system with point of sales systems at pharmacies in Hong Kong so that every sale is now reported and documented for Pfizer.

7. Recommendations

The following are focused recommendations to help combat illicit trade in pharmaceutical products by governments and private entities:

- **Effective national-level cooperation.** Domestic governmental agencies and non-governmental entities (including scientific authorities, accredited and specialized laboratories, industry stakeholders and civil society groups) need to establish strong working patterns based on systematic exchange-of-information practices. The involvement of health authorities as well as the business sector in policy design to combat illicit trade in pharmaceutical products is critical. The active participation of industry is also essential in supporting public authorities in developing a comprehensive risk management approach.[61]
- **Criminalization and sanctions.** Countries should criminalize a range of conduct related to illicit pharmaceuticals and ensure the provision of adequate sanctions (including custodial penalties and administrative sanctions such as fines and disqualifying orders). Consideration should be given to criminalizing conduct occurring at different stages of the illegal supply chain, notably: manufacturing, domestic and cross-border trafficking (including by electronic and distance selling), and possession intended (or likely to be intended) to be used in manufacturing or placed in the supply chain. Countries should also consider adopting sanctioning mechanisms for failure to report known or suspected illicit transactions involving medical products.[62]
- **Investigations.** Law enforcement authorities need to be able to rely on sound procedures and forensic capabilities for the collection, sampling, storage and scientific analyses of substances included in seized medical products. Provision should also be made for the possibility to use special investigative techniques (e.g., controlled deliveries) in criminal proceedings dealing with medical product-related crime. Robust IT databases need to be designed to incorporate all useful information and statistics relating to investigations, prosecutions and convictions linked to illicit pharmaceuticals.
- **Internet monitoring and takedowns.** Law enforcement agencies, online platforms and industry stakeholders should strengthen partnerships aimed at promptly removing Internet content relating to illicit pharmaceuticals. With regards to online monitoring activities, one good practice to thwart online sales of illicit medicines is arguably to monitor points of promotion since illustrators will use paid search advertising, links within social media, cybersquatting and spam, to successfully steer traffic to their illicit offerings.[63] Also, "big data" analytics should be leveraged to the extent possible. In a 2017 study, researchers to use an unassisted machine learning algorithm to filter out hundreds of thousands of tweets unrelated to the study's objective and isolate tweets that specifically mentioned the marketing and sale of prescription opioid drugs.[64]

- **Effective international cooperation:** International cooperation among agencies of different countries should be the basis for standard-setting. It should encompass the sharing of information for a wide range of purposes (operational, criminal justice, risk-assessment, good practices) and personnel. At the global level, States may consider sharing information on detections of falsified medical products through existing platforms, such as the WHO Global Surveillance and Monitoring System (see Section XX). Also, although it entered into force in 2016 as the only internationally legally binding framework to prevent and counter illicit trade in pharmaceutical products, the Medicrime Convention (see Section xx) has not yet been widely ratified. Initiatives to have this instrument adhered to by a critical number of countries need to be re-energized.
- **Track & trace.** It is essential to make supply chains for medical products as impenetrable as possible to illicit trade. Effective track & trace solutions are those that incorporate not only the latest technologies, but also a requirement for inter-operability. As a matter of fact, while several countries and producers have implemented various types of traceability systems, "this has often happened with incompatible proprietary coding and identification requirements. […] All these loopholes may complicate the activity of investigators while favouring criminals, especially those involved in the trafficking of stolen products across borders and jurisdictions."[65]
- **Empower regulatory authorities.** Regulatory authorities should be enabled to assist in the detection of illicit medical products by performing risk-based inspections and monitoring the market, participating in border control activities for imported, exported and transiting medical products, conducting investigations either alone or in cooperation with other authorities, providing access to testing laboratories and screening technologies, and managing both national and international reporting systems. Further, health regulatory authorities should be able to inspect bonded warehouses and free-trade zones to ensure that all medical products being stored in such locations retain their integrity and do not enter the distribution system in the internal market of the State without being imported in accordance with the law of the State.[66]
- **Empower consumers:** Considering the ability of illicit traders to quickly transfer operations from closed websites to new ones, "takedown policies" can only be effective if sustained parallel efforts are made to educate consumers about the dangers of purchasing medicines on the Internet, including through unverified online pharmacies. As part of the "empowerment" strategy targeting consumers, use of authentication technologies (e.g., holograms, color-shift Inks) for the packaging of medical products can provide consumers with an opportunity to distinguish fakes from originals. Cellphone-driven applications can also be used for authentication purposes, as well as to enable consumers to report suspected illicit medical products to regulatory and/or law enforcement authorities.[67]

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VIII. PRECIOUS METALS AND GEMSTONES

1. Overview and findings

Illicit PMGs and trade dynamics

What are illicit Precious Metals and Gems (PMGs)?

The term "precious metals" refer to metals that have a high economic value due to factors such as scarcity, use in strategic industries and role as a preserve of wealth. The most popular precious metals are gold, platinum and silver. Gems are minerals or rocks that can be cut, shaped, and polished into aesthetically enticing stones for jewelry and collection purposes. Precious gems include – among others – diamonds, emeralds, sapphires and rubies.

Illicit trade in both precious metals and gems present similar dynamics. Traffickers often exploit common supply chain vulnerabilities generated, among others, by the easiness with which these products can escape detection by law enforcement and be used as means of payments for illicit operations or money laundering.

In examining illicit trade in PMGs, it is important to differentiate between illegal mining and Artisanal and Small-Scale Mining (ASM). This latter refers to "informal mining (…) conducted by miners who operate on a small-scale and have begun the process of formalization but have not yet been able to meet all legal requirements."[1] Illegal mining, on the other hand, is illegal from the outset as it is "carried out in blatant violation of the law" and "often linked to the corruption of government officials, human trafficking, money laundering and contraband."[2]

2. Modus operandi

2.1 Supply chain modalities

The fragmented and complex nature of global PGM supply chains, from the extraction site downstream to its incorporation in the final products for end consumers,[3] provides serious opportunities for exploitation by criminal networks. The low weight, high value, high durability, stable pricing and the ability to go undetected and untraceable allow precious minerals to be easily smuggled.[4] For example, gold can be handily reworked and a substantial amount of illegally mined gold can be mixed with scrapped gold and sold to legitimate refineries, or can be melted and mixed with other licit metals to become part of the legal supply chain. It then becomes extremely difficult to estimate the amount of illegal gold that moves across national and domestic borders.[5] In the case of gems, their very low weight and mass coupled with their high durability makes their detection particularly challenging. Oftentimes, illegally mined stones are comingled with legitimate stones and reintroduced into the supply chain.[6]

Case study: The price of Jade: Unraveling Myanmar's smuggling networks

Myanmar produces 90 percent of the world's jade and is a leading producer of rubies, sapphires and other varieties of colored gemstones. China is the largest beneficiary of this trade, with untold amounts of jade and gemstones being imported and smuggled across the border to meet the demand of its growing elite.[7]

Myanmar Extractive Industries Transparency Initiative (MEITI) reported that it is widely known that large numbers of gems, both jade and colored stones, are informally smuggled out of the country. Colored stones are extremely easy to carry and smuggle. Moreover, due to lack of enforcement and production monitoring, it is not possible to estimate how much is being informally smuggled. Resources scarcity, lack of capacity and technical expertise, in addition to the fragile security situation, makes it easier for the illicit trade to continue. Further, there is a lack of transparency regarding customs policies and procedures. Customs should manage and process paperwork for gems exports at border control points. The resulting "paper trail" should provide a relatively accurate indication of gemstones crossing borders. In practice, however, it is unknown how many gems are leaving Myanmar's borders unrecorded. It is estimated that 60-80% of Myanmar's gems are sold or exported informally without tax or royalty payments.[8]

2.2 Transport Dynamics

Some of the methods used by traffickers to smuggle illicit PMGs include:

- Exploiting porous borders. In the Democratic Republic of Congo (DRC), for example, traffickers rely on the state's inability to control its territory and borders. Reportedly, around 70 percent of the gold being mined in the DRC is exported illegally, reaching up to 95 percent in the Eastern DRC.[9] India's long and porous coastline also allows criminal operations to smuggle PMGs, the largest sources of smuggled gems being Myanmar and Afghanistan.[10]
- Defrauding customs by not declaring the real value or disguising the true nature of the metal.[11]
- Employing smugglers, known as "mules," to carry stones from the mine over treacherous terrain to gem brokers in bordering countries who sell to international buyers. During the trip, the "mule"– usually a woman – will have to cross several official border crossings, where lackadaisical government officials conduct a cursory inspection. Many individual "mules" claim not even to be aware of the illegal nature of their actions.[12] The smuggler pays a bribe to the official and is waved through.[13]
- Reshaping illicit gold into forms which are easier to conceal from border authorities, including "everyday objects" such as souvenirs wrenches, nuts, bolts and belt buckles.[14] One tactic used by a criminal network in Colombia was to disguise the gold by adding steel or silver layers on top of it and using these to make chains, bracelets, keychains, purse straps and other innocuous objects to be worn by "mules".[15]
- Exploiting air personnel for smuggling purposes. Because PMGs are highly valuable, lightweight and compact, air transport is the most common way for moving them across borders. A study conducted by the Financial Action Task Force (FATF) has shown the sophisticated methods used during air transportation. One case involved a person giving

refined gold ingots to an air hostess which had access to all airport zones. She was able to evade airport security and customs and left the ingots at the restroom facilities. Later, a courier picked up the ingots and further distributed the illicit goods to international buyers.[16]

Case study: Exploiting the air route in India, Sri Lanka and Russia for illicit gems[17]

An Indian national flying to Dubai was detained by customs officials at Mumbai International Airport trying to smuggle out USD 1 million worth of diamonds inside chocolate wrappers, mixed with chocolate. When questioned, he explained to investigators that he was told that he was carrying valuables worth Rs 40 lakh (around USD 61,000), and that he was paid Rs 40,000 (around USD 620) for the job. He further said that he was given a return flight ticket to Dubai and instructed to deliver the diamonds there.

In 2017, Sri Lanka customs officials at the Bandaranaike International Airport arrested a French national who tried to smuggle in several precious stones worth over Rs.11 million. The person, who arrived in Colombo from Dubai, had concealed four gemstones – three yellow sapphires and one blue sapphire – worth Rs.11.5 million in his shoes and clothes.[18]

A Russian passenger trying to smuggle in various gems was detained at Moscow's Sheremetyevo Airport on his way back from Dubai. There were 26,000 diamonds of different colors and cuts packed in plastic bags worth about 5 million rubles (about US$163,000). The man, a Russian citizen, walked down the "nothing to declare" customs lane. The man claimed that the gems and other goods did not belong to him as he was just asked by a friend to transport them.[19]

2.3 Hotspots

2.3.1 Online platforms

In recent years, online platforms have become a marketplace for PMGs. Sales are easily facilitated via online chats and payments are made using cryptocurrencies, which are harder to trace.

- Smugglers and middlemen exploit platforms such as Facebook, Messenger and WhatsApp to piece together the first steps of the global supply chains that still carry conflict diamonds to international markets.[20] Investigators from the NGO Global Witness posed as smugglers, creating online profiles to identify smugglers. They reported communicating easily via WhatsApp and Facebook Messenger with smugglers who sold in countries like Belgium, France, Brazil, Israel and the Middle East.[21]
- Online platforms are also leveraged by traders as they allow them to sell straight to consumers, with fewer intermediaries involved. Cyber intelligence analysts found a store on the Darknet called "Africa Products" which sold discounted diamonds, raw gold and rhino horns directly to consumers. The website claimed that they could gather and sell the products so cheaply because the manpower they used cost close to nothing. Payment was conducted through Bitcoins (cryptocurrency) and was retained until the customer had verified that they had received the shipment.[22]

- The undervaluing of registered jade and gemstones costs Myanmar billions of dollars in lost tax revenue. Even when the sales are conducted in Myanmar, online transfers via Chinese payment platforms such as Alipay and WeChat Pay[23] result in further revenue loss. There is a rising trend of illegal and low-quality goods being posted for sale on WeChat at unrealistically low prices.[24]

2.3.2 Free Trade Zones

There is little data available on the exploitation of FTZs for the illicit trade in PGMs, arguably because of the ease with which they may be disguised, concealed and smuggled. There have been a few instances of Venezuelan gold being smuggled in and out of the Curaçao Airport Free Economic Zone to parts of the U.S. and from there to the U.A.E. and Europe.[25]

Case study: Gold smuggling under the radar: challenges in Indian FTZs[26]

Two companies (A and B) located inside a Special Economic Zone (SEZ) were authorized to manufacture and to trade in gold jewelry. This involved importing gold in either bullion form or as semi-finished jewelry from foreign jurisdictions into the SEZ by A and B. After customs clearance, the goods would be moved from the airport to the SEZ. On the way, the company would replace the sealed jewelry packets with brass, scrap metal or other imitation jewelry. The jewelry that had been imported would then be sold to customers in legitimate gold local markets outside the SEZ. The sealed packets containing brass, scrap metal or other imitation jewelry would be self-certified as gold and studded jewelry by companies A and B and then subsequently exported. This scheme was made possible due to the absence of checks on exports of jewelry from SEZ. The magnitude of this scheme was revealed when intercepted export consignments declared to contain 190 kg gold jewelry with an estimated value of USD 7 million were found to contain scrap metal. Further 30 kg gold jewelry belonging to a related company was seized valued at USD 1.2 million. The total amount of customs duty evasion amounted to 10 million USD in addition to evasion of other taxes.

2.3.3 Postal systems/ express couriers

Parcels containing illicit PMGs do move across borders. A recent survey conducted by the Universal Postal Union and TRACIT with postal authorities across 115 countries observed precious gems being smuggled via postal channels

Case study: The intricate world of small parcel rough diamond trading[27]

In May 2014, Belgian federal authorities seized three parcels of rough diamonds. The parcels had been shipped through the United Arab Emirates (UAE) with Kimberley Process certificates. Even though the country of origin of the merchandise was listed as the Democratic Republic of Congo (DRC), the UN Panel of Experts believe that the diamonds originated from the militia-controlled zones of the Central African Republic (CAR). Few other large seizures have been reported, suggesting most of diamonds smuggled out of this latter country are finding a relatively easy route into international markets.

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

Illicit trade in PMGs is a global industry with longstanding value. Penetration of the industry by organized criminal groups (OCGs) allows them to maintain global support networks and a global platform for money laundering. OCG involvement in illicit mining occurs through the taxation or extortion of both legal and illicit miners operating in the region under their control, as well as the direct control and operation of illicit mines. OCGs in Mexico, Colombia, Venezuela, Peru, Guyana and other South and Central American countries exploit valuable metals, minerals and precious stones such as gold, silver, copper, coltan (colombite-tantalite), iron, coal, emeralds, and uranium. Neighboring countries and Caribbean islands serve as transshipments points, while North American countries are final destination markets.

According to the U.S. Federal Bureau of Investigation, Russian, Chinese, Italian, and African organized crime groups illegally move colored gems across international borders to avoid customs duties or taxes. In 2004, Russian organized crime was estimated to extract and sell more than 300 metric tons of amber a year – worth more than USD 1 billion.[28]

Research conducted into criminal networks exploiting South African PMGs have revealed at least five types of actors involved at different levels of the illegal supply chain,[29] potentially suggesting that similar structures are also present and active in other parts of the world:

- Layer 1: Illegal miners, mine employees stealing products from mine operations as well as facilitators, including corrupt mine security personnel and police officials.
- Layer 2: Middlemen, including direct buyers of mine products and those supporting layer 1 people with logistical support.
- Layer 3: Bulk buyers who purchase PMGs from different layer 2 actors, package them into larger consignments and act as couriers.
- Layer 4: Legitimate business owners – often well connected to political elites – which frequently employ front companies and re-package the products with the aim of hiding their origin and prepare them for international shipping.
- Layer 5: International networks ensuring that the illegally traded PMGs are shipped to overseas destinations and reach foreign buyers, often by using false documentation.

Case study: Blood diamonds and beyond: organized crime's reach in precious gem and metal smuggling across multiple nations

- **DRC.** The United Nations Group of Experts on the DRC estimates that 98% of the gold produced in DRC is smuggled out of the country and that nearly all of the gold traded in Uganda – the main transit country for Congolese gold – is illegally exported from the DRC.
- **Russian Federation.** Organized crime has been extensively involved in smuggling gems and precious metals out of the country. In 1998 and 1999, Russian law enforcement removed from illegal circulation about 1 metric ton of gold, more than 1 metric ton of silver, and 28,000 carats of uncut diamonds, cut gems, emeralds, rubies, sapphires and pearls.
- **South Africa.** According to statistics revealed by the South African Police Services, 0.8% to 1.6% of the world's gold production gets stolen in South Africa annually and that only 1.4% to 2.8% of stolen gold is recovered.[30]
- **Latin America.** Drug-cartel associates posing as precious-metals traders buy and mine gold in Latin America. Cocaine profits are their seed money. They sell the metal through front companies – hiding its criminal taint – to refineries in the United States and other major gold-buying nations like Switzerland and the United Arab Emirates. Once the deal is made, the cocaine kingpins have successfully turned their dirty gold into clean cash. To the outside world, they're not drug dealers anymore; they're gold traders.[31] Money laundering through gold smuggling has been rampant in Sudan,[32] Ecuador,[33] Guyana.[34]

A specific and recurrent concern lies in the connection between organized criminal groups, local militias and armed conflict in various parts of the world. Illegally mined or traded diamonds and gold are being used by criminal groups as alternative currency to trade in other illicit goods such as guns and drugs;[35] and to fund rebel groups, militias and armed gangs.[36] There are several reported instances of illegal mining being associated to trafficking of explosives, often used to commit other crimes such as robberies, bombings of facilities and conflict operations.[37]

Case study: Militias in CAR: catalysts of crisis and fragility[38]

In 2017, parts of a fragile government in the CAR stood accused of serious corruption as it struggled to govern remaining territories alongside strongmen and remnants of the anti-balaka in the west of the country. While the international community—including through the Kimberley Process—were working with CAR's government and diamond companies to establish legitimate supply chains, smugglers and traders were thriving in the parallel black market. Through these illicit channels, the violent armed groups that still control large diamond-rich areas in the east, and the strongmen that retain influence in parts of the west, may still be profiting from diamonds that reach international markets. The profits of this trade further offer an economic incentive to perpetuate chaos and instability.

3.2 Corruption

In the illicit PMG trade, opportunities for fraud and corruption are rife in murky procurement processes, loopholes in national regulatory frameworks including licenses and permits, the fragmentation/complexity of logistical management, and at border points.[39] Concerning these latter, in particular, a study of contraband of gold in the Great Lake Region concluded that various Ugandan exporters had informal arrangements with Entebbe airport security officials in order to facilitate the smooth export of illicit gold.[40]

A 2014 OECD Foreign Bribery Report[41] also found that – in a study of reported enforcement actions for foreign bribery from 1999 to 2014 – the highest percentage of corruption cases were in the extractive sector and involved paying bribes to obtain public procurement contracts. Moreover, the mining industry operates in some of the most corrupt countries in the world, and in difficult locations where companies in other industries would not choose to invest.

Case study: Mineral wealth, systemic problems: tackling corruption in Myanmar and the border area

In **Myanmar,** jade is subject to a 20% of value tax when it is first mined. However, Global Witness has received numerous accounts of companies paying off officials to reduce or avoid this tariff. One jade company manager had reported that all the companies do this. Others are substituting low-value for high-value stones during the official valuations. Such maneuvers are generally a prelude to smuggling.[42]

Pakistan and Afghanistan have no official agreement on the export of minerals to Pakistan. Rampant corruption occurs at border crossings, causing significant revenue losses. Surveillance is weak at the borders and corrupt officials turn a blind eye to illegal exports and, in return, they too benefit from it. The bulk of this industrial-scale mineral looting—which has burgeoned over the past decade—has occurred not through surreptitious smuggling but openly, in significant mining operations, with visible transport of minerals on large trucks along major highways and across the Afghan border at a few government-controlled points.

The Afghanistan Anti-Corruption Network had reported that militant groups illegally exported minerals and precious stones from eastern Nangarhar province to neighboring Pakistan. Up to 750,000 tons of marble and talc stones were smuggled in 2016 from various parts of the restive province, where Taliban and Islamic State fighters have been active in several districts. Every day, 500 trucks, each carrying around 45 tons of white stones would pass through government-controlled roads and arrive in Pakistan from where the stones are shipped to European countries.[43]

3.3 Forced Labor

Illegal mine operations are typically located in remote areas where governments lack the capability to monitor conditions and enforce laws – including, notably, labor laws. When mines are directly controlled by criminal groups, or are located in areas controlled by them, there is an elevated risk of human trafficking within this illegal industry.[44]

Because these mines operate clandestinely and fail to abide by the law, the workers employed are highly vulnerable to extreme forms of labor exploitation, including forced labor, child and trafficking.[45]

There have been recorded instances of child trafficking and exploitation and sexual exploitation of women and children in the mining industry in India,[46] Peru,[47] Angola,[48] Guyana, Ecuador,[49] Colombia[50] and Bolivia.[51] In the DRC, where illegal mining represents one of the most abusive and dangerous places to work in the world, children make up an estimated 40% of the miners as they are physically small enough to climb into tiny mine shafts.[52]

Case study: Behind the glitter: Uncovering the exploitation of women in gold mines[53]

Field research has highlighted a large number of cases in which women and girls are trafficked into illegal gold mining areas for sexual exploitation through deception or after being sold by family members into the sex trade. The United Nations Special Rapporteur on Contemporary Forms of Slavery has echoed this finding. Many women and girls respond to advertisements for jobs or are directly recruited by middlemen who offer well paid work in mining camps as cooks, store clerks or waitresses. Once the victims agree, their identification documents are confiscated. They are given fake IDs and new identities and are told what to say if questioned by authorities. Some women are required to provide sexual services to clients at restaurants and stores in mining camps, while others are trafficked into brothels. Women working as cooks are also often forced to provide "sexual favors" to miners.

3.4 Money Laundering

Connections have been established between illicit trafficking of various forms of PMGs and money laundering. For example, proceeds of crime are laundered through the purchase and sale of gold. Individuals who have a need to launder cash, especially those involved in organized crime, participate in the cash-for-gold business as this entails a high propensity to make a profit. In most jurisdictions, there is little governance or oversight of this type of activity. Cash-for-gold businesses can provide a continuous supply of untraceable gold commodities from various sources, allowing for falsification of source and blending of licit and illicit supplies. Gold tied to drug trafficking is smuggled from one continent to another and is either kept as profit or sold and cycled anew. The international gold trade is exposed to the laundering of vast amounts of criminally derived funds.[54]

Jewelry can be recycled back into bar form and deposited into banks, with the proceeds wired to offshore accounts, or it can be physically transported back to the refining countries to restart the cycle. Apart from laundering funds, export brokers also take advantage of export credits by over valuing. Suspect exports also include gold "scrap" as it is difficult to determine the value of this, as it enters countries at any value the parties care to declare, gold pigment, gold plated copper medallions, plated lead bars, gold disguised as machine parts, steel dies and others.[55]

As to diamonds, they represent a perfect vehicle for money laundering through their high value, low weight, durability and ability to go undetected, and because they are easily disguisable from stones of lesser value. As the Kimberley Process of certification (detailed below) only applies to rough diamonds, once these are cut and polished it becomes almost impossible to determine their origins. Additionally, different professional evaluators may provide two reasonably and considerably different evaluations to the same stone. This fact enables the manipulation of price for any specific deal, causing difficulties in investigation and in judicial proceedings since it will be difficult to establish the price of a diamond where there is no true and unique value.

Further, diamonds have unique properties that make them very attractive as a form of illicit currency, and as a means to move value across borders. They are also difficult to detect at borders and are susceptible to be used in under- and over-valuation schemes. Not surprisingly, the Financial Action Task Force (FATF) emphasized diamonds' high-value to weight ratio, which makes them susceptible to criminal exploitation in trade-based money laundering schemes.[56]

Case study: The Bullion connection: money laundering threats in the U.S. gold sector[57]
The U.S. market plays a key role in the global exchange of precious metals. Criminal networks use often-witting U.S. businesses to exploit U.S. regulations and export illegally extracted gold to the U.S. to launder billions of dollars of illicit proceeds from criminal operations in Latin America. Because gold bullion is classified as a commodity rather than a monetary instrument, the imported gold is not subject to Treasury Department reporting requirements; nor is it subject to customs duties, which limits law enforcement visibility into this money laundering method and increases profitability for criminal organizations.

4. Impact on the UN Sustainable Development Goals

Illicit trade in PMGs has both direct and indirect adverse impacts on the achievement of the Sustainable Development Goals (SDGs). Below is a brief overview of how the SDGs might be affected.

- **SDG 1.** *No poverty.* Illicit trafficking in PMGs adversely affects sustainable economic growth and development for resource-rich source countries and the mining industries that work there legally. Furthermore, fiscal revenues derived from taxes and license fees are lost, along with employment opportunities and the development of supporting infrastructure serving the mines and local communities.
- **SDG 3.** *Good health and well-being.* Illegal mining disregards health and safety requirements for miners, thereby putting their lives at risks. In many cases, illegal mining businesses do not have adequate and suitable safety gear (e.g., masks, gloves and hearing protection) for their workers. The use of mercury in illegal gold mining represents a particular threat to good health and wellbeing.

  Illegal mining operators continue to employ children to work under dangerous conditions above and below ground. They risk death from explosions, rock falls and tunnel collapses in addition to breathingair filled with dust and sometimes toxic gases. They also dig, crush, mill and haul ore and stand for hours in water.[58] The gold mining industry is particularly hazardous for child workers due to the prolonged exposure of toxic metals.
- **SDG 6.** *Clean water and sanitation.* Runoffs and improper production practices contaminate water basins with heavy metals and other poisons and renders drinking water unsafe for human consumption around these mines.

- **SDG 8.** *Decent work and economic growth.* The pervasiveness of unfair work conditions, child labor and other violation of human rights threatens the viability of the global legitimate minerals industry and the achievement of SDG Target 8, in particular SDG Target 8.7 (eradicate forced labor and child labor) and SDG Target 8.8 (safe and secure working environments for all workers).
- **SDG 9.** *Industry, innovation and infrastructure.* Illegal mining of PMGs drains investment in essential infrastructure such as roads that enable wider social and economic progress.
- **SDG 12.** *Responsible consumption and production.* Disregard for mining regulations leads to inefficient use of natural resources and exacerbates the challenge to effectively manage chemical and other wastes.
- **SDG 13.** *Climate action.* The illegal excavation of minerals often destroys large parcels of land and causes deforestation. Forest removal for mining and soil excavation further limit CO2 absorption capacities of forests.
- **SDG 14.** *Life below water.* Illegal mining causes contamination of rivers and underground water basins jeopardizes biodiversity and underwater ecosystems.
- **SDG 15.** *Life on land.* Illegal mineral excavation accelerates deforestation and degrades natural animal habitats.
- **SDG 16.** *Peace, justice and strong institutions.* As elucidated above, illegal mining funds organized crime, terrorism and military conflict that undermine peace, justice and good governance.

5. Institutional framework

This section features a selection of some of the most relevant and innovative initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

United Nations Economic and Social Council (ECOSOC)

2019 Resolution on "Combating transnational organized crime and its links to illicit trafficking in precious metals and illegal mining, including by enhancing the security of supply chains of previous metals."

In this resolution, the ECOSOC acknowledged that the vulnerability of the supply chain facilitates illicit trafficking in precious metals and contributes to the creation of a significant revenue base for organized criminal groups. Among other things, it stresses the importance of international cooperation between Governments and private sector entities to counter transnational organized crime as well as the need to develop national risk assessments on the integrity of the supply chain, establishing regional laboratories to profile PGMs. It also invites Member States to work in cooperation with UNICRI, UNODC and other relevant international and regional organizations on emerging technologies.[59]

Organization for Economic Cooperation and Development (OECD)[60]

Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict Affected and High-Risk Areas

The Guidance is the leading standard for companies looking to identify and better manage risks in the entire supply chain, from mine to retail. It is the result of collaboration among industry associations, international organizations and governments. The aim is to promote transparency, integrity and accountability in the supply chain of minerals from conflict-affected and high-risk areas on the basis of a five-step framework. These steps require importers to: 1) establish strong company management systems; 2) identify and assess risk in the supply chain; 3) design and implement strategies to respond to identified risks; 4) carry out independent third-party audits of supply chain due diligence; and 5) report annually on supply chain due diligence.

One of the Guidance's key focus areas is the creation of "economic and development opportunities for artisanal and small-scale miners", with a call on all stakeholders to engage in legalization and formalization programs of artisanal mining communities.

Financial Action Task Force (FATF)

International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation (40 Recommendations)[61]

Originally drawn up in 1990 to address the misuse of the international financial system by drug-traffickers, the 40 Recommendations have undergone various revisions over the years and are now endorsed by over 180 countries. They are universally recognized as the international standard for anti-money laundering and countering the financing of terrorism (AML/CFT). Key recommendations are addressed to "Dealers in precious metals and dealers in precious stones." Whenever these actors – in their capacity as "Designated Non-Financial Businesses and Professions" (DNFBPs) – engage in any cash transaction equal to or above the applicable designated threshold (which is currently set at USD/EUR 15.000) they are under an obligation to engage in customer due diligence, record-keeping and the reporting of suspicious transactions. Additionally, dealers in precious metals and stones shall:

- Under Recommendation 18, implement programs against money laundering and terrorist financing, including policies and procedures for sharing group-wide information for AML/CFT purposes. Moreover, they shall ensure that their foreign branches and majority-owned subsidiaries apply AML/CFT measures consistent with home country requirements.
- Under Recommendation 19, apply enhanced due diligence measures to business relationships and transactions with natural and legal persons, and financial institutions, from selected countries. These measures should be effective and proportionate to the risks. Countries should be able to apply appropriate countermeasures when called upon to do so by the FATF.

Guidance on the Risk-Based Approach to combating Money Laundering and Terrorist Financing for Dealers in Precious Metals and Stones

Dealers in precious metals and dealers in precious stones are the primary target audience of this FAFT Guidance to the extent that their activities fall within the scope of the FATF Recommendations, as described above. The term "dealer" is identified very broadly with reference to all those who produce precious metals or precious stones at mining operations, intermediate buyers and brokers, precious stone cutters and polishers, precious metal refiners, jewelry manufacturers who use precious metals and precious stones, retail sellers to the public as well as buyers and sellers in the secondary and scrap markets.

Developed in close consultation with industry representatives, the Guidance recognizes the differing practices of dealers in different countries and the different levels and forms of monitoring that may apply. It is centered around the development of a sound risk-based approach through the promotion of a common understanding of this concept, the outline of high-level principles and the dissemination of good practices.

European Union

EU Conflict Mineral Regulation[62]

In force since January 2021, the EU Regulation aims to ensure that EU-based importers of tin, tantalum, tungsten and gold (3TG) meet the international responsible sourcing standards set by the OECD Due Diligence Guidance (see above). The Regulation's limited scope of application is justified by the argument that the 3TG are overwhelmingly liked to armed conflicts and related human rights abuses.

The e European Commission announced plans to draw up a list of conflict-affected and high-risk areas, which will be regularly updated. While the list is supposed to provide an indication of currently or potentially "problematic" zones, it will not exonerate companies from applying the Regulation whenever they operate in conflict-affected areas that are not specifically listed.

Kimberley Process[63]

Established in 2003, the Kimberley Process is a multilateral trade regime that aims to prevent the flow of conflict diamonds while helping to protect legitimate trade in rough diamonds. At the core of the Kimberley Process is a Certification Scheme (KPCS) under which participants implement safeguards on shipments of rough diamonds and certify them as "conflict free."[64]

The KPCS outlines a set of minimum requirements based on the following principles:

- Issuance of a Certificate to accompany each shipment of rough diamonds upon export;
- Prohibition to import/export shipments of rough diamonds from/to a non-participant;
- Designation of an Importing and an Exporting Authority(ies);
- Obligation to ensure that rough diamonds are imported and exported in tamper resistant containers;
- Collection and maintenance of official data on production, import and export.

The Kimberely Process is adhered to by 56 participants representing 82 countries, with the European Community counting as a single participant. Participants include all major rough diamond producing, exporting and importing countries and account for approximately 99.8% of the global production of rough diamonds.

5.2 Selected national responses

South Africa's 2005 Precious Metals Act[65]

The 2005 Act entrusts South Africa's Diamond and Precious Metals Regulator with the task to oversee all matters relating to the acquisition, possession, smelting, refining, fabrication, use and disposal of precious metals.

Moreover, the 2005 Act empowers the police – without prior notice and on the authority of a warrant – to inspect and search premises and persons as well as to seize relevant items. The Act sets forth a number of criminal offences such as for a person to "buy unwrought or semi-fabricated precious metal without having satisfied himself or herself that the vendor thereof is lawfully entitled to sell or dispose of such metal." Applicable penalties range from financial sanctions to imprisonment up to ten years.

A role is also envisaged for the national police' Forensic Science Laboratory in terms of creating and maintaining a database with information in respect of specimen of precious metals submitted to the police by any producer or importer (see case study).

Case study: Gold's digital frontier: navigating South Africa's gold database[66]

South Africa's 2005 Precious Metals Act (and related regulations) requires that all mining companies and importers of gold regularly submit samples for inclusion in a "gold database." For producers, sample submissions shall take place every six months, cover the various shafts on the mine property and encompass both unprocessed and processed gold.

The purpose of the "gold database" is to ensure that items seized by law enforcement agencies – on suspicion that they have been stolen – can be compared for possible matching with stored samples with a view to establishing the gold's origin. This technique is called "fingerprinting." Accordingly, the requirement for the various stakeholders to make regular submissions stems from the need to keep the database up to date, reflecting the fact that the nature of gold and its processing varies over time. Information collected by UNICRI in 2016 showed that "gold fingerprinting technology can distinguish between gold mined from various South African […] mines and even accurately identify the shaft from which the material was mined. It also differentiates between gold processed in a refinery and illegal smelting processes, as the latter would traditionally have higher levels of certain impurities."

U.S.' Dodd-Frank Act[67]

Also known as the Conflict Minerals Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) was originally introduced to reduce violence linked to mineral extraction in the Democratic Republic of Congo and a specific list of adjoining countries. It contains a whistleblowing provision and allows people to be rewarded for reporting information on security violations to the U.S Securities and Exchange Commission

(SEC). The SEC approved rules mandated by the Dodd-Frank Act in Section 1502 requiring companies to disclose their use of "conflict" minerals (particularly gold, coltan, tantalum, tin and tungsten), many of which are used in electronics. One rule, in particular, requires mineral extraction companies to disclose payments they – or entities under their control – make to foreign governments.

China's Due Diligence Guidelines for Responsible Mineral Supply Chains[68]

Developed in 2015 under the auspices of China's Chamber of Commerce of Metals, Minerals and Chemicals Importers & Exporters (CCCMC), the Guidelines have been developed in close consultation with the OECD and have benefited from a public consultation[69] as well as input from industry organizations and select stakeholders. The Guidelines are designed to align Chinese company due diligence with international standards. They apply to all Chinese businesses which are extracting and/or using mineral resources and related products at any point in the mineral supply chain. Companies using or engaged in the supply chain of other natural resources are also encouraged to use the Guidelines as a reference.

Case study: Operation Diez Condores[70]

Initiated in January 2016 as a joint investigation by the FBI and Chile's police, the operation shed light on Chilean-based traffickers who procured gold from various illicit sources and collected the metals at their headquarters in Santiago, Chile. Couriers for the criminal network hand-carried the gold on commercial aircraft from Chile to the U.S. where they presented fraudulent paperwork to U.S. customs officials in Miami, designed to obscure the gold's true origin and composition. The couriers would then deliver the gold to a U.S. refinery, NTR Metals Miami (NTR), which paid for the gold via wire transfer back to Chile.

In August 2016, members of the criminal network were arrested in Chile after the investigation documented USD 80 million in gold shipments that moved through multiple shell companies established in Chile and Miami with the assistance of NTR. The criminal charges ranged from racketeering to smuggling, customs fraud and money laundering. Intelligence gathered by U.S. law enforcement officials helped to identify inconsistencies in NTR's practices and showed that the Miami executives were aware that the gold that they were purchasing was linked to gold smuggling, illicit mining and narcotics trafficking activities.

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

The two main pillars of industry's engagement to counter illicit trade (and related practices) aim to establish responsible supply chain management systems and to mitigate money laundering risks.

- **Responsible supply chain management.** Over the past few years, the private sector has placed the concept of "responsible supply chain management" at the core of its decision making and business operations. Taking the "5-Step Framework" outlined in the OECD Guidance as a template (see above), several industry initiatives – supported by national governments – have incorporated the Guidance into their local efforts. The following are examples of prominent initiatives taken by private stakeholders active in different sectors and phases of supply chains for PMGs:

- **Mining industry.** Nine of the world's largest mining companies established the Global Mining Initiative to change the way the sector had been operating through a review of their business programs and a study of the issues facing the industry.[71] Through the World Business Council for Sustainable Development (WBCSD), these companies commissioned the International Institute for Environment and Development (IIED) to develop measures to understand sustainable development in the mining and minerals sector and how to translate these into ground-level implementation and ensure consequences for non-compliance.[72] Companies have since incorporated several measures to address the issues that were then plaguing the industry and to promote sustainable development. Furthermore, since the launch of the UN Sustainable Development Goals in 2015, the mining industry has now set out targets to potentially contribute to all the 17 SDGs.[73]
- **Jewelry industry.** The RJC Code of Practices (COP)[74] was developed by the leading standard-setting organization for the jewelry and watch industry, the Responsible Jewelry Council (RJC).[75] The COP defines the requirements for establishing responsible business and due diligence practices throughout the jewelry supply chain, from mine to retail. The COP covers businessesof any size, and its scope includes all the primary minerals and metals used in the manufacture of jewelry: gold, silver, platinum group metals, diamonds and colored gemstones. To ensure that all RJC members are in a position to effectively implement the COP, they must undergo a five-step certification process:
    - Self-assessment: The member prepares for a certification audit by doing a self-assessment and then engaging an RJC accredited auditor.
    - Audit: The auditor visits the member's sites and verifies that the systems and operating procedures in place conform to the COP.
    - Report: An audit report is prepared, including a statement of conformance, and sent to the member and the RJC. Nonconformances are noted.
    - Certification decision: The RJC reviews the auditor's report for completeness and clarity and, based on the report's findings, certifies the member. If the auditor finds no, or only minor, non-conformances, the RJC will certify the member for three years. If major nonconformances are found, the member will only be certified for one year, and only on the condition that it develops a corrective action plan that is agreed by the auditor. If a critical breach is found, the member will face disciplinary proceedings.
    - Review and recertification: The member starts the certification cycle again after one or three years as the certification period comes to an end. Where required, the auditor may carry out a mid-term review to verify that the member's systems still work effectively.

- Diamond industry: In 2020, De Beers launched an ambitious plan to reach 12 milestone objectives in four key areas by 2030: Thriving Communities, Ethical Practices, Protecting Nature, and Equal Opportunities.[76] Under "Ethical Practices", the company has committed to:
    - Continue to evolve and elevate the company's Best Practice Principles (BPPs) and align with the highest international standards across all areas of business, social and environmental impact. De Beers' BPPs apply as a mandatory requirement for all those doing business with the company – suppliers, clients and contractors alike – resulting in coverage of 2,700 entities across the diamond industry. As per the BPP, all entities must implement robust due diligence practices in accordance with the OECD Due Diligence Guidance.
    - Continue to certify all its operations to Responsible Jewelry Council (RJC) standards and share its expertise and knowledge to drive wider adoption of best practice standards across the industry.
    - Continue to roll out its supplier responsible sourcing standard at mining operations, ensuring that it builds awareness of emerging supply chain risk areas, sustainability requirements and ethical work principles.
    - By 2025, scale programs to support origin transparency at retail for diamonds discovered by De Beers.
    - Record the majority (by value) of De Beers' annual production on Tracr™, the company's technology platform built on blockchain which aims to provide assurance of the provenance and authenticity of natural diamonds throughout the entire diamond value chain.

- **Mitigating money laundering risks.** PMG supply chains are highly susceptible to abuse for money laundering purposes. For this reason, various efforts have been made by industry – on both the national and international level – to counter this risk. Initiatives include the issuance of anti-money laundering guidance, participation in FATF consultative forums, industry seminars, etc. Either through their own codes of conduct (e.g., De Beers' Best Practice Principles) or the principles established by the business federations of which they are members, (e.g., RJC's Code of practices), companies in the PMG sector adhere to Know Your Customer (KYC) policies as a key aspect of anti-money laundering policies. KYC policies typically require that companies:
    - Identify their counterparts by checking government-issued identification and government listings for money laundering, fraud, involvement in prohibited organizations and/or financing conflict.
    - Monitoring transactions and report suspicious transactions to relevant authorities.
    - Maintaining records for at least 5 years unless a longer period is required under domestic laws.
    - Appoint a focal point responsible for the implementation of KYC policy and procedures.

Case study: Ethical diamonds: The World Diamond Council's System of Warranties[77]

Established by the World Diamond Council (WDC), the System of Warranties (SoW) is an industry self-regulation system that goes beyond the Kimberley Process Certification Scheme (KPCS) by covering not only trade in rough diamonds, but also in polished diamonds and jewelry set with diamonds. In essence, the SoW requires buyers and sellers of rough diamonds, polished diamonds and jewelry containing diamonds to include a statement on B2B invoices and memos each time diamonds change hands, assuring the next buyer that the diamonds originated from sources in compliance with the KPCS.

The implementation of the SoW is envisaged as a mandatory practice in "responsible business" codes enacted by leading diamond and jewelry commercial bodies, among them De Beers' Best Practice Principles, and Signet Jewelers' Responsible Sourcing Protocol for Diamonds.

In 2018, the scope of the original SoW was expanded by including a commitment that buyers and sellers adhere to universally accepted principle of human and labor rights, anti-corruption and anti-money laundering (AML) as envisaged in WDC Guidelines.

To assist in the implementation of the revised SoW, a self-assessment questionnaire is now available to support industry members. The questionnaire takes into account the stages of the diamond and jewelry value chain in which the member is involved, the size of the member's business, and whether the member is already compliant with other due diligence systems.

6.2 Business driven technological solutions

An array of technological solutions is employed by companies active in the PMG sector with the aim to provide full product tracking from mine to retail.

- **Blockchain technology.** Thanks to its combination of features such as decentralized structure and encryption to ensure network security, transparency and visibility, this technology is finding increasing applications in the PMG sector. One example is offered by the TrustChain Initiative, a collaborative endeavor between IBM, UL, independent third-party verification and with five diamond and jewelry companies that represent the entire supply chain.[78] Blockchain technology is also being used as a tool to provide transparency directly to end-users.
- **Laser-marking technologies.** By applying a nano mark to the atomic structure of the diamond, these technologies basically replicate a process that occurs in stones over millions of years. In 2021, ALROSA released a new laser-marking tool to its diamond customers, allowing them to trace rough stones and polished gems from the mine to the jewelry store. The physical mark is only visible with a special scanner and differs from other modern tracing techniques based on keeping a digital copy of the gem, including with blockchain, or laser engraving, which can be polished off.[79]
- **Digital solutions for artisanal and small-scale mining.** Launched by De Beers in 2018, the GemFair pilot program seeks to create a secure and transparent route to market for ethically-sourced artisanal and small scale mining (ASM) diamonds from Sierra Leone. The program uses a digital solution to track and trace diamonds directly from their mine of origin.[80] ASM miners who meet these standards are invited to use

equipment provided by De Beers, including an app, a dedicated tablet and a diamond toolkit, to digitally record and log each diamond they find, making it harder for the diamonds to be swapped out or stolen.[81] These hardware and software are especially designed to meet the ASM sector's requirements, both in terms of being practical (weatherproof, hard-wearing, functioning in different light conditions) and risk-mitigating (featuring digitally supported bag-and-tag equipment and GPS location of diamonds).

Case study: Pfizer's commitment to transparency: serialization in Hong Kong

Pfizer found that sales of their blockbuster drug Viagra were being undermined in Asian markets by major counterfeiting operations. In Hong Kong alone, approximately 40% of Viagra sales were found to be counterfeit.

To expose the fakes and increase the sales of the authentic drug, Pfizer turned to Kezzler's serialization technology. Kezzler applied both visible and non-visible codes, which were unique, secure and traceable, to each pack of Viagra at the distribution centers, avoiding packaging lines completely to speed the serialization process. Full implementation took place within a few weeks of the printing and approval of the first batch of labels. The codes enabled consumers, Pfizer and other supply chain stakeholders to verify every pack's authenticity with a scanner. A major challenge was educating consumers on how to use the new security feature. However, Kezzler introduced QR and Datamatrix codes to the package design, allowing consumers to use a smartphone to verify authenticity in a matter of seconds. Launched in 2012, this project has since expanded to several more products and countries in Asia, for which the Pfizer team also won a Commercial Innovation Award. Currently, Kezzler has integrated their online system with point of sales systems at pharmacies in Hong Kong so that every sale is now reported and documented for Pfizer.

7. Recommendations

The following are focused recommendations to help combat illicit trade in PMGs by governments and private entities:

- **Enhanced customs and border monitoring.** Customs departments need to work closely with other governmental agencies to strengthen border monitoring and controls with respect to gemstone smuggling. Technical assistance should be provided for appropriate support to carry out this function more effectively. Capacity-building is all the more important to enhance customs authorities' ability to detect illegal PMGs and ascertain their origin. For example, customs agents are incapable of differentiating a Myanmar ruby from a Thai ruby. They also have very little ability to estimate the value of a stone, so importers can vastly under-declare the value of an item to avoid import taxes. The 2019 ECOSOC Resolution on "Combating transnational organized crime and its links to illicit trafficking in precious metals and illegal mining" calls all member states to consider adopting legislative or other appropriate measures to strengthen border control. Furthermore, it stresses the importance of incorporating advance technologies as may be necessary to prevent and detect illicit trafficking in precious metals and the use of mercury in illegal mining.[82]

- **Effective PMG strategic and regulatory frameworks.** A comprehensive and forward-looking regulatory system should be established and implemented with a view to: i) Developing and coordinating national capacities to secure supply chains' integrity; ii) Maximizing public and private sector cooperative endeavors; iii) Enhancing the understanding and knowledge of existing illicit trade patterns and threats as a way to fine-tune policy and enforcement responses; iv) As recommended by UNICRI, establishing a National Precious Metals Action Plan. While functioning as an objective on its own, the Plan will also support the achievement of the three above-mentioned objectives.[83]
- **Smart export policies and procedures.** A revision of existing policies and procedures with respect to PMGs exports could be explored, and options could be considered for the establishment of specific export procedures adapted to this sector. For example, simplified export procedures for smaller traders could be envisaged. These could enable informal or smaller traders to trade gemstones up to a certain volume or value, with simplified documentation, across borders. Allowing informal traders to trade gemstones (up to a certain limit) may allow enforcement agencies to better allocate their resources to focus on larger smugglers. Export countries may also consider simplifying the formalization process by which informal miners may gain legal status.
- **Targeted criminal legislation and penalties.** Sufficient levels of deterrence should be created starting with the criminalization of conduct associated with PMG trafficking across and within borders. The criminal framework should encompass conduct related to environmental degradation, labor and health abuses. As highlighted by UNICRI, "offences related to precious metals may vary from country to country. Laws or regulations can give rise to administrative, civil or criminal liability, with some States relying more on criminal sanctions, whereas others rely more heavily on the civil or administrative sanctions. Many countries, particularly states in Africa and Latin America, do not comprehensively criminalize the many activities affiliated with the illegal trade of precious metals, making enforcement difficult. In this regard, legal and regulatory reform becomes crucial for successfully combating precious metal crimes."[84]
- **Adequate criminal justice responses and supporting techniques (e.g. "fingerprinting").** Law enforcement and prosecutorial functions are key nodes in tackling illicit trade in PMGs. And yet, in many countries criminal justice officials lack sufficient financial and human resources in the face of significant caseloads. Also, they are rarely aware of – or specifically trained in – mining law and PMG regulations. While it is important to enhance countries' general law enforcement and prosecutorial capabilities, specific methodologies can be critical in supporting related agencies in identifying PMGs as stolen and determining the original producer or producing country. For example, while progress has been made in curbing illicit trade in some PMGs via certification schemes, the ease and anonymity with which gold can be smuggled has so far made it impossible to craft a gold tracing scheme. To address this difficulty, at least three countries (Australia, the Russian Federation and South Africa) have resorted to "fingerprinting" techniques. For "fingerprinting" to properly function, however, the size and comprehensiveness of related databases are critical, ideally covering a wide range of deposit types, different mines operating at the various deposits and different products originating from the processes used.

- **Expanded scope for policies on due diligence and responsible sourcing.** Private-sector stakeholders should adhere to and fully implement all available governmental and industry-based guidelines and policies on responsible sourcing as well as support the introduction of equivalent policies for PMGs that are not covered yet. Companies may also consider implementing "vertical integration" models, i.e. the merging of two or more businesses that operate at different stages of the production/supply chain. Arguably, "when one company has control over various aspects of production and manufacturing, this structure allows producers to maintain a more transparent mine-to-market trail and to more efficiently contend with the risks that go along with those trails. A secondary benefit of vertical integration is that a company charged with both mining and cutting gem material has a chance to develop relationships with the people who perform these duties."[85]
- **Enhanced action against forced labor in the PMG extraction sector.** Companies may consider sourcing directly from mines or cooperatives with demonstrated adherence with labor laws rather than through intermediaries, refineries or exporters. For their part, governments should provide adequate financing and capacity building for labor inspectors, who often face remote and dangerous working conditions themselves. Companies should support such investment including, in priority jurisdictions, cooperating with representative trade or employers' organizations to promote regulatory environments that contribute to the fight against forced labor.
- **Deeper knowledge of the problem.** The size of illicit trade in PMGs, its dynamics and the nature of the criminal actors and facilitators globally involved is the object of several anecdotal analyses. However, these issues have not been systematically researched or quantified. There is a need to develop more accurate knowledge bases and data sets – including through the development of close public-private partnerships – to sustain the design of informed policies.
- **Integration of the underlying socio-economic factors into existing strategies.** There must be recognition that poverty can be a major factor behind precious metal offences. In some developing countries, traditional artisanal and small mining (ASM) practices are viewed as illegal mining activities, and formal criminalization can create further hardships for people depending on gold, diamonds and precious gemstones for their livelihoods.[86] To be comprehensive, any mitigation strategy focusing on illicit trade in PMGs needs not only be seen as a matter of criminal law enforcement, but also integrate issues linked to mineral resource management, industrial restructuring, rural development and poverty reduction for mining-dependent communities.

NOTES

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IX. TOBACCO PRODUCTS

1. Overview and findings

Illicit tobacco and trade dynamics

What is Illicit Trade in Tobacco Products?

Illicit trade in tobacco products can manifest itself in three broad modalities:[1]

- **Smuggling.** Legally produced products sold illegally somewhere other than their intended destination and without paying duties imposed by law. The smuggling of tobacco products often takes place in small-scale, cross-border operations from low to high tax jurisdictions where individuals transport an amount of products in excess of what is permitted by customs regulations. In other cases, organized criminal networks are behind the diversion of large quantities of tobacco products across borders and without payment of applicable taxes and duties.
- **Counterfeiting.** Fake tobacco products that carry or imitate the trademark of a particular product without the agreement of the trademark's owner.
- **Illicit/cheap whites.** These are cigarettes, including with registered trademarks, which are produced legally in a country with the sole intention to smuggle them to other markets under the guise of legitimate exports. As manufacturers of illicit whites are able to operate legally within a country, they often have sophisticated facilities where they are able to produce cigarettes of a higher quality than counterfeits. They can also avoid the litigation associated with counterfeiting activity.

The physical features of tobacco products, i.e., being light, easy to conceal and not perishable, make illicit trade in tobacco one of the largest criminal enterprises in terms of profitability. Given the considerable excise tax to which they are subject, tobacco products can also be a very large revenue generator for governments.[2] Consequently, this represents a significant driver of illicit tobacco, as illicit traders can profit by illegally commercializing tobacco through tax avoidance and evasion behaviors.[3] Illicit tobacco networks thrive in environments marked by vulnerabilities. Specifically, illicit tobacco trade flourishes when tax administrations are weak, government record-keeping ineffective, border security and inspection procedures modest, and coordination between finance, customs and other agencies involved in tax collection and enforcement are poor.[4]

Depending on the most salient drivers in each jurisdiction, illicit trade in tobacco may be perpetrated by single individuals smuggling small quantities of tobacco product, criminal organizations conducting large scale operations, or a combination of both. Considering these components and the various forms in which illicit trade in tobacco manifests itself, the supply chain of tobacco products may be affected at different levels and nodes.

Further to fueling other criminal industries, notably organized crime, illicit trade in tobacco has severe impacts on government budgets and consumer health. According to WHO estimates, one in ten cigarettes consumer in the world is illicit.[5] As these products are not subject to taxes, drain government fiscal income and hamper resource mobilization opportunities.

In terms of consumer health, illicit trade in tobacco has three main negative consequences.

- The availability of low-priced illicit tobacco products weakens tobacco policy efforts aimed at reducing the consumption of these products.
- Fiscal tax losses can subtract from more effective implementation of public health programs, policies and infrastructures.
- Present potentially more harmful health risks (than legal tobacco) because they are manufactured outside of regulatory controls creating the possiblity to include unregulated, spurious ingredients. Additionally, they may fail to comply with packaging and labelling standards aimed at deterring tobacco consumption.[6]

2. *Modus operandi*

2.1 Supply chain modalities

Illicit trade in tobacco presents major health, economic and security concerns around the world.[7] Depending on the trade dynamics and other key factors in each territory, countries can be affected in different manners. For instance, Central American countries receive significant flows of illicit whites from Asia, which are normally channeled into a handful of Free Trade Zones for redistribution.[8] European countries primarily face small-scale smuggling operations, featuring both individual passengers who cross borders concealing undeclared packages of cigarettes and the use of e-commerce and small parcel delivery of illegal tobacco via postal services and private courier operators.[9]

Distribution schemes for illicit trade in tobacco can be highly complex and unpredictable, i.e., jurisdictions can swiftly shift from origin to transit or destination points, or even become origin, transit, and destination hubs simultaneously. In most cases, illicit cigarettes are consumed in a country different from the one in which they were produced.[10]

- Prior to the Covid-19 pandemic, counterfeits manufactured in Eastern European countries were intended for EU markets, where tobacco is considerably more expensive due to the relatively high EU excise tax on tobacco and the strength of the Euro. However, in the wake of imposed travel and border restrictions, clandestine production facilities have moved within the EU region.[11]
- Andorra, Belgium, Luxembourg and Spain are significant origin countries for illicit tobacco destined to France, which shows that many illicit products come from cross-purchases with bordering countries due to the price differential.[12]
- Several ASEAN countries have emerged as key hubs in the global supply chain for illicit tobacco, in part due to their proximity to China, which is an origin country for illicit whites.[13] Cigarettes manufactured within ASEAN countries are also smuggled to other ASEAN countries, other Asia-Pacific countries and to global markets. For example, there are substantial outflows of illicit whites and counterfeits smuggled from Vietnam and Cambodia to Europe.[14]

The supply chain modalities of illicit trade in tobacco remain complex, as the relation between origin and destination countries is also dependent on the type of trafficked cigarette and other considerations that are not always clear. For instance, Europol's Serious and Organized Crime Threat Assessment (SOCTA 2021) has revealed that illicit production facilities have been discovered in several EU Member States and that illicit tobacco products are increasingly produced in the EU, closer to their destination markets.[15]

Moreover, the direction of illicit tobacco flows can be severely impacted by the interplay between geographical, demographic, political, and socioeconomic factors. In today's world, the relationship between these factors occurs in a fast-paced environment, which explains why illicit trade flows and supply chain modalities can change rapidly.

Countries can be affected by illicit tobacco in many ways. For instance, they can be origin jurisdictions for counterfeits, transit for illicit whites and destination for certain smuggled brands. In addition, tendencies can fluctuate quickly due to new policies, geopolitical dynamics, unexpected crises (e.g., refugee flows) or consumer preferences.

Case study: Multifaceted and volatile supply chain schemes – the example of Lebanon as an origin, transit and destination country for illicit tobacco products

Traditionally, Lebanon has been a manufacturing country with large tobacco plantations that play a considerable role in the Lebanese economy, society and financial sector.[16] In this context, over the past decades a handful of criminal actors have established legitimate factories that were exploited to develop a parallel and illegal tobacco supply chain that extends to countries as far-flung as Cameroon and Moldova.[17]

At the same time, following the conflict in Syria, official reports have declared that more than 30% of tobacco products in the Lebanese market were contraband originating in Syria.[18] This trend was underpinned by Syrian consumers' preference, as Lebanon currently hots approximately 1.5 million refugees from Syria, representing more than 25% of Lebanon's total population. In addition, Lebanon appears to serve as a transit jurisdiction for illicit whites coming from UAE and China.[19]

2.2 Transport Dynamics

Illicit trade in tobacco has been reported in relation to air, maritime and land transportation, with illicit traders using different routes and means of transportation depending on the volume of the illicit cargo that they intend to traffic. Also, illicit traders are aware of weak border controls at key international crossings.

Because illicit trade in tobacco is a low-risk, high-reward criminal activity, traffickers pursue a variety of means to transportation means and routes to maximize cross border trade profits.

For example:

- Illicit whites produced in China and Eastern Europe enter Nigeria via seaports, concealed in cars and trucks across land borders with Benin and Togo. To a lesser extent, air passengers also smuggle smaller quantities of illicit whites.
- Given their geographical location, Central America countries such as El Salvador, Honduras, and Nicaragua became international transit hubs of illicit trade in tobacco, including illicit whites and genuine smuggled products, from Mexico, China, and India. From there, illicit tobacco products travel to markets north and south via ground transportation.

- France and Germany are two large markets for illicit trade in tobacco, while they also serve as transit countries (e.g., illicit cigarettes produced in Eastern Europe and destined to the UK).[20] These two countries receive smuggled products from Eastern Europe through land transportation and from the Maghreb region via maritime and air channels.

The means of transportation chosen for illicit trade in tobacco is essentially related to the type of illicit products to be trafficked and the official controls to be avoided. The selection of the transport modalities also corresponds to the ever-evolving interplay between geographical, political, and socioeconomic factors. Below is an overview of the most common modus operandi:

- Illicit whites often travel long distances by maritime transportation from origin countries to specific hubs, where they are later redistributed by other means of transportation. This practice has been reported as occurring in several hubs that receive cheap whites from Asia and the Middle East.[21] On other occasions, illicit whites have been observed traveling in bulk by land. This is notably the case of cheap whites produced in Eastern European countries destined for EU markets.[22] The trafficking of illicit whites has grown exponentially over the past years, surpassing the volumes of smuggled and counterfeit products.[23]
- Smugglers also use uncharted routes and exploit border blind spots. This practice has been reported in countries with large and porous borders, such as Central American and Western African countries. Borders are often permeable and are crossed by foot, by horse or all-terrain. The modus operandi includes:[24]
    - Concealing tobacco products inside luggage, voluminous products (e.g., mattresses) or secret compartments in vehicles.
    - Offloading and reloading cargo and comingling it before and after border crossings, depending on the intensity of the controls. This modus operandi can also include the misuse of warehouse permits in facilities located close to border controls.

The above-mentioned methods are often accompanied by various manifestations of corruption (e.g., bribery of customs officials) to enable or overlook the transportation of illegal cargo.[25]

Concerning counterfeits, these may also be produced and consumed in the same country as part of small-scale operations that aim to supply local rural areas. In these cases, the transportation of the counterfeits from production to distribution centers may take place by various means of transportation, e.g., car, horse, or by foot.

Case study: Up in smoke: illicit tobacco's impact on Singapore and Malaysia

In 2017, the illicit consumption of tobacco in Singapore represented 13.8% of the total consumption.[26] The majority of non-domestic inflows consisted of cigarettes intended for sale in Indonesia and Malaysia, which found their way to the country via sea transportation. In practice, when the cigarettes passed through the Singaporean FTZ, part of the cargo was illegally diverted into Singapore. From the port, the transportation took place via land routes. Over the past few years, the Singaporean authorities have thoroughly investigated this and have managed to severely curtail this modus operandi for illicit trade in tobacco.[27]

However, law enforcement pressure in Singapore and a series of non-coordinated policy decisions in Malaysia, mostly related to excise and curtailing resources for police controls, created a tangible driver of illicit trade in tobacco in the latter country. Illicit traders rapidly found their way to introduce their products in Malaysia, where the figures of illicit tobacco reached roughly 60% of the total consumption.[28]

2.3 Hotspots

2.3.1 Online platforms

E-commerce is frequently used to facilitate illicit trade. Generally, illicit traders benefit from the anonymity and minimal exposure that online activities provide, managing to avoid controls and to ship considerable amounts of products to online consumers.[30] This is also the case for those listing tobacco online. By using images of genuine products and exploiting the fact that consumers cannot inspect the products ahead of their purchase, illicit traders and counterfeiters have been increasing illicit offers online.

In the past decade, the number of social media users has increased dramatically. This tendency has been severely exacerbated by the Covid-19 pandemic. During the 2020 and 2021 lockdowns, several companies and law enforcement agencies reported a significant increase globally in the use of digital platforms to illegally commercialize all type of products, including tobacco products.[31]

A study conducted by the Royal United Services Institute (RUSI) in 2018 on the interplay between e-commerce and the illicit tobacco trade found that:

- E-commerce, postal and small parcel delivery services have had a considerable impact on illicit trade in tobacco in all regions.[32]
- Illicit tobacco products are readily available for purchase through online marketplaces, specialized websites, and social media platforms.[33]
- Platforms such as Facebook have become the primary channel through which illicit tobacco products are sold online.[34] However, there are regional variations. For instance, online purchases of illegal tobacco in Ukraine are often conducted via Telegram.[36] It has been reported that this application is also widely used by drug dealers to distribute their products.
- There appears to be two main types of illicit traders online: (i) Small-scale/opportunist sellers, which conduct occasional sales. These individuals normally do not have any ties to criminal organizations; (ii) Organized criminals with sophisticated infrastructures. These criminal groups often have steady supplies of illicit tobacco, frequently with direct connections with foreigner traffickers. A small number of highly prolific sellers appear to be responsible for a large proportion of all illicit sales online.[37]

Online illicit trade in tobacco has been reported in relation to counterfeits, smuggled tobacco and illicit whites. Europol describes the online trade in illicit goods and services as one of the primary engines of organized crime, explaining that "the emergence of smaller criminal networks, especially in criminal markets that are highly dependent on the internet as part of their modi operandi or business model".[38]

The online trade in illicit tobacco varies across regions:

- In Eastern European countries, such as Ukraine, Russia and Belarus, illicit traders promote their products through a wide variety of social media networks, making undercover law enforcement operations to identify illicit traders costly and time consuming.
- In Latin America, Africa and the EU, illicit traders tend to conduct their business both through online social networks (e.g., Facebook and Instagram) and messenger applications, such as Telegram and WhatsApp.
- Depending on the country and the illicit trade dynamics at stake, illicit traders sell different types of products online. For instance, in Central America there are several online websites offering illicit whites coming from the Colon FTZ in Panama, whereas in Western Europe most of the illicit products that are found online are smuggled.

Globally, tobacco products ordered online are generally delivered directly to the customer's domicile or at agreed delivery spots.

Case study: Vape bans and illicit alternatives: the Internet's underworld

Argentina, Mexico and Panama have recently enacted laws to restrict the importation, commercialization and distribution of non-combustible alternative products (i.e., vapes). In Argentina, the importation, commercialization, and advertising concerning these products is strictly forbidden. In Panama, the law banning these alternative products only restricts their importation, use, and commercialization within the Panamanian territory, allowing their distribution and transportation through FTZs.[39]

This situation has created fertile ground for the illegal, illicit commercialization of non-combustible products. In Panama, for instance, they remain widely available and easy to access, with 5 percent of the general adult population reported using these products.[40]

2.3.2 Free Trade Zones

In order to minimize the risk of detection, criminal networks dealing with large amounts of illicit tobacco (e.g., contraband, counterfeits or illicit whites) need to create complex networks of logistics platforms, warehouses and distribution companies. For this reason, traffickers exploit FTZs to hide operations and facilitate manufacturing and transit tactics.

While FTZs are vulnerable to many forms of illicit trade, they have become particularly notorious for the illicit trade in tobacco. For example, FTZs in the UAE and Panama are widely known for being exploited by illicit traders specialized in trafficking illicit whites.[41]

Criminal organizations exploit several of the structural vulnerabilities in FTZs, such as poor oversight and lack of transparency/ clarity in the scope of regulations that cover customs controls inside the zones. In addition, FTZs provide unique facilities to disguise a product's illicit origin or destination and the tend to have weak procedures to inspect cargo.[42]

2.3.3 Postal systems/ express couriers

The use of postal systems and express couriers is closely associated with illicit trade through online platforms, as illicit traders rely on these services to deliver the illicit product to end consumers.

European countries have seen a considerable increase in the exploitation of postal and delivery services to transport illicit tobacco products. According to the OECD, the main fake product categories shipped via small parcels to the EU include tobacco products.[43] The exponential growth in parcel trade through postal services and express couriers further has further burdened the inspection process.

Taking advantage of the challenges faced by authorities, illicit traders have adopted a low-volume/ high-frequency approach to moving illicit tobacco products without exposure. thereby avoiding seizures. RUSI has reported that organized criminal groups dedicated to illicit trade in tobacco have managed to coordinate long-lasting operations using multiple addresses and different nodes to avoid detection, making it particularly difficult for customs, border agencies, and courier operators to identify and detect illicit tobacco.[44]

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

Illicit trade in tobacco is among the most profitable types of illicit trade.[45] Well-structured and multinational criminal syndicates are present in almost all reported illicit tobacco operations, including large scale operations and those involving small cargoes.[46] When it comes to small cargoes, in particular, trafficking in tobacco products offers the benefits of a low-risk, high-reward criminal activity. In countries such as Panama and Paraguay, the estimated value of an illicit cargo of tobacco needs to exceed USD 500,000 in value to give rise to a criminal offence.[47] As a result, most suspicious cargoes are investigated for customs fraud or other administrative offences, which normally carry lower penalties and do not permit the use of special investigative techniques. Hence, investigations rarely seek to identify the criminal network behind an illicit trade in tobacco operation. Criminal networks are aware of this type of legislation and have become particularly creative when it comes to concealing illicit tobacco.

Cases demonstrating the presence of criminal organizations, including militias and armed groups, in illicit trade in tobacco include the following:

- In Mindanao, the Philippines, several armed factions that were previously linked to kidnapping for ransom and other serious criminal activities (such as the Abu Sayyaf Group and the Moro National Liberation Front (MNLF), are now responsible for the surge in domestic cigarette smuggling.[48]
- Europol's Serious and Organized Crime Threat Assessment (SOCTA 2021) has identified key criminal groups involved in illicit tobacco trade activities across the EU. In particular, SOCTA 2021 reports that criminal gangs establish illicit tobacco production lines in large warehouses in remote industrial areas close to transportation hubs like motorways, border crossing points or ports. Also, SOCTA reports that criminal groups use the same transportation methods to traffic drugs, stolen vehicles (and their parts) as well as irregular migrants.[49]

- In Eastern European countries, the production of counterfeit cigarettes is a highly organized activity, demanding the illicit acquisition of equipment and machinery to manufacture substantial quantities of cigarettes. This inherently calls for the backing of a sophisticated criminal structure. Criminal gangs in Eastern European countries also control the movement of cheap whites and smuggled products. In general, tobacco products originating from China, India and UAE are diverted across Eastern European countries to be channeled into the EU. To a lesser extent, some products remain for internal consumption.
- In Australia, the Criminal Intelligence Commission has reported the presence of serious and organized crime cartels using illicit trade in tobacco as a platform for further illicit activities including narcotics imports and terrorism. The significant excise tax burden on tobacco creates a considerable driver for criminal gangs, as "the amount of profit organized criminals make on just one container of cigarettes means that they only need one out of 30 containers to get through to still make a profit."[50]

3.2 Corruption

Corruption is recognized as a key facilitator of illicit tobacco trade, especially for large-scale manufacturing and diversion.[51] However, due to the nature of the crime, corruption in illicit trade in tobacco often goes undetected.

Developing countries are especially exposed to corrupt practices.[52] At the same time, Europol has reported that the role of corruption has been largely underestimated in developed countries.[53] According to SOCTA 2021, "corruption is used to undermine transport infrastructure, pass border crossing points or gain access to ports and airports. Criminal networks have infiltrated transport infrastructure across the EU."[54]

3.3 Money Laundering

According to the FATF, illicit trade in tobacco is a tangible vector for money laundering given its cash intensive and profitable nature, and its low levels of risk for the offenders in terms of detection, seizure and prosecution.[55] In particular, a 2012 FATF report outlined that the massive amounts of loss in terms of tax revenue necessarily create considerable money laundering risks.[56]

Funds obtained from cigarette smuggling are frequently laundered by purchasing goods for personal use (e.g., cars, houses, or other property), or to develop tourist clusters and infrastructure, legal business, and to finance corruption schemes.[57]

3.4 Forced Labor

As a result of interviews conducted with a wide range of companies, trade associations, government agencies, intergovernmental organizations, extensive desk research and conversations with investigators, TRACIT's report on "The Human Cost of Illicit Trade: Exposing Demand for Forced Labor in the Dark Corners of the Economy" has expanded the understanding of how organized criminals are using and abusing labor and demonstrated how forced labor, child labor and human trafficking intersect with multiple forms of illicit trade.

Illicit trade in tobacco criminals go to great lengths to stay undetected and keep costs down – with slave labor being a vital component in this. The above-mentioned TRACIT report features key cases showing that when forced labor has been found associated with illicit trade in tobacco, it is usually in the manufacturing of illicit tobacco products. The report delineates examples of forced labor used explicitly for illegal or illicit operations including, inter alia, illicit trade in tobacco:[58]

- In February 2020, the Spanish Civil Guard (supported by Europol, Lithuanian Customs Criminal Service (Muitinės kriminalinė tarnyba), Polish Police Central Bureau of Investigation (Centralne Biuro Śledcze Policji) and LEAs from the United Kingdom) dismantled an organized criminal group involved in illegal cigarette manufacturing and drug trafficking. What they found was a complete production line for illicit cigarettes hidden in an underground bunker, together with beds and living quarters for the workers. According to Europol, workers there were forced to work in extremely dangerous and toxic conditions and were not allowed to leave the facility. After the criminal leaders were arrested, the workers were left trapped in the underground bunker,[59] until they were found banging on the soundproofed trapdoor, gasping for air.[60] Europol also reported a similar case that discovered workers being blindfolded when transported to and from the clandestine factory. Workers may have been paid for their work, but they were not allowed to leave, or to make contact with other people while working.[61]
- Another European case similarly deals with the intersection of clandestine production of cigarettes and forced labor: In November 2019, the Hungarian National Tax and Customs Administration (NTCA, Nemzeti Adó- és Vámhivatal) uncovered an illegal cigarette factory operating in a rented warehouse in Budapest. Upon arresting the ringleaders and 20 factory workers,[62] Europol and EUIPO reported that the workers had been forced to live and work in the factory, unable to leave the locked, soundproof, purpose-built rooms.[63]
- Workers were also housed in the illicit tobacco factory in two recent cases from Spain: In March 2021, a joint investigation by Spain's Customs Surveillance of the Tax Agency and the National Police resulted in the raid of two factories dedicated to the illegal production of tobacco in Valladolid. The investigation began in November 2020, when Bulgarian authorities informed Spanish authorities that Bulgarian citizens would enter Spain with the intent to work in a clandestine tobacco factory. After months of surveillance, an inspection pointed to labor exploitation of workers. In addition to finding all the machinery necessary for the complete production of illicit cigarettes, investigators observed that the warehouse was fully equipped to house workers, including toilets, kitchen and sleeping quarters in order to avoid anyone having to leave the factory. A home address of one of the Bulgarian citizens was also searched. A total of ten mobile phones in airplane mode were found, which confirmed that the workers, in addition to being completely isolated from the outside world, were also deprived from any forms of communication in order to avoid informing anyone of their location. Eight Ukrainian nationals, and one Bulgarian national, were arrested.[64]

4. Impact on the UN Sustainable Development Goals

Illicit trade in tobacco has both direct and indirect adverse effects on the SDGs. Below is a brief overview of how these might be affected.

- **SDG 3.** *Good health and well-being.* Reducing smoking consumption and mitigating the harmful effects of tobacco smoking is intrinsically linked to SDG 3 (ensure healthy lives and promote well-being for all at all ages). The availability of low-priced illicit tobacco products undermines tobacco control policy efforts intended to reduce the uptake of tobacco by youth and adults from low-income groups. Government health policy objectives are further undermined when lost sales tax revenues drain funding for anti-smoking campaigns and healthcare. The larger the problem— such as large-scale cigarette smuggling—the greater the drain on public revenue, the higher the costs of controlling associated organized criminal networks and the greater the risk to public health.
- **SDG 8.** *Decent work and economic growth.* Clause 32 of the 2015 "Financing for Development Addis Ababa Action Agenda" (later endorsed by the UN) identifies price and tax measures on tobacco as an important revenue stream for financing development in many countries. Therefore, increases in tobacco taxes can represent a win-win for developing countries in terms of expanding a country's tax base. However, the effectiveness of such policies can be limited if they do not account for local market circumstances or are not combined with an interconnected policy response to illicit trade. The illicit trade in tobacco not only causes significant financial damage to government revenues, but also hurts the economic stability and competitiveness of legitimate industry actors that comply with regulations—creating a drag on economic growth.
- **SDG 16.** *Peace, justice, and strong institutions.* Illicit tobacco can erode the rule of law and upset peaceful existence by financing the operations of criminal networks. Large-scale illicit tobacco trade, which is generally conducted by organized criminal networks, thrives in environments characterized by weak governance, high levels of corruption and lax law enforcement. This illegal activity generates large illicit financial flows (SDG Target 16.4), enables corruption (SDG Target 16.5) and facilitates other transnational organized crimes such as human trafficking (SDG Target 16.2).

5. Institutional framework

This section features initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

World Health Organization (WHO)

WHO Framework Convention on Tobacco Control (FCTC) and the Protocol to Eliminate Illicit Trade in Tobacco Products (Tobacco Protocol)[65]

Entered into force in 2005, the WHO FCTC provides legal approaches for international cooperation on matters of public health. Article 15 specifically deals with the illicit trade in tobacco by recognizing that the elimination of all forms of illicit trade in tobacco products is an essential component of tobacco control. It requires each Party to adopt specific measures to mark all unit packets and packages of tobacco products to assist Parties in determining the origin of tobacco products. Article 15 also sets forth measures aimed at data monitoring and collection and the strengthening of legislation to counter illicit trade in tobacco (including appropriate penalties and remedies), among others.

A few years after the adoption of the WHO FCTC, the Tobacco Protocol was developed in response to the still growing illegal trade in tobacco products. Entered into force in 2018, the Protocol is based on Article 15 of the WHO FCTC and defines illicit trade in tobacco as any practice or conduct related to producing, shipping, receiving, being in possession of, distributing, selling or buying tobacco products and that is prohibited by law. The Protocol aims to make the supply chain of tobacco products secure through a series of measures adopted by Parties. It notably requires the establishment of a global tracking and tracing regime within five years of its entry into force, comprising national and regional tracking and tracing systems and a global information sharing point located at the Secretariat of the WHO FCTC. Other provisions to ensure control of the supply chain include licensing, record keeping requirements as well as the regulation of international transit, Internet- and duty-free sales.[66]

iEuropean Union (EU)

The EU has developed several strands of actions to counter illicit trade in tobacco:

One of the European Anti-Fraud Office (OLAF)'s mandates is to crack down on illicit trade in tobacco. It does this by carrying out investigative work and supporting EU institutions and national administrations in shaping policies to combat smuggling.

EUROPOL's workplan includes excise fraud as a key criminal area, covering alcohol, cigarettes, and fuel, and focuses on the following main areas of excise fraud in Europe: (i) the smuggling or illegal importation of excise goods, (ii) the illegal manufacture of excise goods, (iii) diversion, which involves diverting goods without paying excise duty.[67]

In 2013 the EU adopted a comprehensive EU Strategy[68] to step up the fight against cigarette smuggling and other forms of illicit trade in tobacco products. The Strategy was accompanied by an Action Plan, which includes, inter alia, the following pillars:

- Measures to decrease incentives.
- Measures to secure the supply chain.
- Measures to strengthen enforcement.
- Cooperation between authorities.
- Sharing expertise and best practices.
- Enhance cooperation with major source and transit countries.
- Strengthening sanctions.

In 2017, the European Commission published a progress report on EU measures against cigarette smuggling.[69] The report noted that despite significant progress, the problem was still as acute as ever. However, it also indicated that thanks to strong legislative responses, robust law enforcement and greater cooperation (national, European and international), the 2013 Strategy was still relevant.

In 2018, the European Commission presented a new Action Plan[70] with concrete steps to address both the supply and the demand for illegal tobacco products. The Plan continues to focus on the WHO FCTC Protocol internationally and implementing the new traceability system for tobacco products in the EU.

The European Multidisciplinary Platform Against Criminal Threats (EMPACT) introduces an integrated approach to EU internal security, involving measures that range from external border controls, police, customs and judicial cooperation to information management, innovation, training, prevention and the external dimension of internal security, as well as public-private partnerships where appropriate. For the period 2022-2025, EMPACT established excise fraud as a priority: "To target criminal networks and individual criminals engaging in the large-scale excise fraud with particular focus on the production and/or trafficking of illicit tobacco products in the EU."[71]

INTERPOL

INTERPOL offers operational and investigative support to its member countries to fight the global trade in illicit goods. It organizes operations against illicit goods in different regions aimed at dismantling criminal networks and reducing the risk to public health by:

- Collecting data and disseminating intelligence (e.g., analytical reports and threat assessments).
- Coordinating transnational law enforcement operations.
- Supporting multi-agency task forces to improve cooperation between police, customs, regulatory bodies and the private sector.
- Delivering national and regional training sessions and promoting the International IP Crime Investigators College (IIPCIC).
- Raising public awareness and helping consumers to make informed choices.

Most recent operations specifically relevant to illicit trade in tobacco include:

- Operation Jupiter (Argentina, Brazil, Chile, Colombia, Ecuador, Panama, Paraguay, Peru and Venezuela).
- Operation Afya (Angola, Botswana, Eswatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Tanzania and Zimbabwe).[72]

5.2 Selected national responses

Nigeria's National Agency for Food and Drug Administration Control (NAFDAC)

NAFDAC established an anti-counterfeiting strategy based on the following pillars:

1. Capacity Building.
2. Cutting Edge Technology.
3. Sustained Public Enlightenment.
4. National Collaborations with other agencies, professional bodies and civil society.
5. International Collaborations.
6. Attaining WHO Prequalification.[73]

NAFDAC has been working on awareness-raising activities and alarm sounding over the importation of illicit tobacco into Nigeria.[74] It regularly conducts raids and seeks to dismantle structures devoted to the illegal importation and production of tobacco products.[75]

Singapore's law enforcement endeavors to tackle illicit tobacco trade

Singapore serves as a valuable case study of the effectiveness of a rigorous and comprehensive enforcement regime for mitigating illicit trade in tobacco.

Over the past couple of years, Singaporean law enforcement agencies have engaged in a zero-tolerance policy against illicit tobacco. While official statistics on the extent of the illicit tobacco market in Singapore are not available, research indicates a significant reduction in illicit tobacco trade during this period.[76] This decline can be attributed at least partially to Singapore's determined efforts to combat illicit tobacco by enhancing law enforcement capabilities and resources.

Singapore has implemented measures designed to oversee and regulate the entire tobacco supply chain, as outlined in the framework of the Customs Act and its associated regulations. Within this comprehensive framework, several laws govern Singapore Customs' responsibilities in addressing illicit tobacco trade. These laws include the Customs Act, the Goods and Services Tax Act, Regulation of Imports and Exports Act, and the Free Trade Zones Act. These multifaceted measures incorporate a licensing and permit system to effectively manage cross-border tobacco trade.

Singapore has also undertaken a comprehensive "whole-of-government and layered approach" to combat illicit tobacco trade. The focal point of this strategy is Singapore Customs, operating under the Ministry of Finance, as the principal agency responsible for both trade facilitation and revenue enforcement. This multifaceted approach includes: (1) robust licensing regime on import, export, and transshipment of goods; (2) permit requirements for individual shipments; (3) intelligence operations to augment risk assessments to select suspicious shipments; (4) targeted shipments subjected to inspections

with post-clearance audits; and (6) tracking and sharing onward movements of goods for international cooperation. Violators face severe penalties for the various criminal offences for illicit tobacco trade in Singapore, and conditions for the seizure, and disposal or destruction of seized illicit tobacco products serve as an additional deterrent.

Singapore actively participates in enforcement and collaboration with relevant regional and intergovernmental organizations. This includes its involvement with the Regional Expert Group for Regional Illicit Tobacco Enforcement Package (RITEP) and the World Customs Organization (WCO) Regional Intelligence Liaison Offices Asia Pacific (RILO AP). These collaborative efforts encompass investigations, prosecutions, and proceedings aimed at countering illicit tobacco trade on both regional and global scales.

Singapore has taken proactive steps to review and modify its own procedures in response to the evolving challenges posed by illicit trade. Previously, Singapore allowed for unrestricted temporary storage within free trade zones, enabling goods to be loaded onto other ships or aircraft for re-export without requiring customs clearance. This created a significant vulnerability for illicit tobacco trade, as FTZs were being exploited for the storage of contraband cigarettes. However, starting in February 2020, Singapore implemented a 30-day limit on the temporary storage of tobacco products within FTZs. Longer storage periods now necessitate the transfer of goods to licensed warehouses. Moreover, companies are now required to obtain permits for transferring cigarettes from one FTZ to another.

In 2023, Singapore announced amendments to the Free Trade Zones Act to enhance the regulation and control of goods passing through the country's ten FTZs. These amendments encompass the introduction of a licensing regime for FTZ operators, new regulations for cargo handlers, and an expansion of enforcement powers for Customs authorities. These enhancements grant the Director-General of Customs the authority to grant, renew, suspend, or revoke licenses, as well as to impose or modify licensing conditions, order the removal of dangerous goods, and detain goods for inspection.[77]

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

Industry stakeholders affected by the smuggling and counterfeiting of their products actively contribute to public-private collaboration programs aimed at enhancing the work of customs/law enforcement authorities. For instance:

- The Tobacco Manufacturers Association (TMA) regularly organizes a Tobacco Security Forum (TSF) to bring together industry security representatives, members of the tobacco supply chain, law enforcement officers and crime mapping organizations to share expertise, intelligence and best practice. The TSF links with other established forums to ensure a more joined up approach.[78]
- Philip Morris International (PMI) regularly organizes capacity building and collaboration with law-enforcement agencies. The company hosts online workshops around the world on subjects such as IPR protection, training for customs officials and information-sharing about the latest trends in illicit trade in tobacco.

- Japan Tobacco International (JTI) established an Anti-illicit Trade Operation (AITO) team to assist law enforcement agencies. The company collaborates with OLAF and Europol, providing 80 percent of its illicit tobacco-related intelligence to these agencies.[79] This type of cooperation is supported by "seizures and analysis teams" that help build cases underpinning successful prosecutions.[80]
- PMI adopted a technology-based approach aimed using multiple innovative solutions to preserve supply chain integrity. The program focuses inter alia on (i) track and trace solutions aimed at preventing products diversion, (ii) use of AI to identify and prevent illegal sales, (iii) mandatory "know your customer" and "know your vendor" policies, and (iv) Awareness raising and civil society engagement to highlight the harm associated with the sale of illicit tobacco.[81]

6.2 Business driven technological solutions

- **Track and Trace solutions.** These systems monitor the manufacturing and distribution of tobacco products from their origin to their final destination, namely consumers. The case study below showcases the features of the recently enacted track and trace requirements enacted by the EU.

Case study: The EU track and trace system for tobacco products

In 2019, the EU commenced the implementation of a system requiring that each tobacco package carry a Unique Identifier (UI) code that will be scanned and recorded along the distribution chain and transmitted to both the manufacturers and the EU-wide database, allowing authorities to trace and authenticate tobacco products. The implementation of this new system required a new level of data transfer, a highly developed IT infrastructure, and renewed packaging machineries.[82] During the last meeting of the European Commission Expert Group on Tobacco Control, the stakeholders defined next steps to implement the extension of the traceability system's scope to tobacco products other than cigarettes and roll-your-own tobacco from May 2024.[83]

- **Encryption and Blockchain Transparency.** Blockchain ledger technology is a distributed system that does not need centralized control, allowing users anywhere in the world to transfer digital properties without a contract or a third-party negotiation. Using blockchain technology in the supply chain is one of the emerging applications of this technology.[84] The use of blockchain technology may become more widespread, as supply chains have become increasingly complex. In the past, the distribution was more linear, but throughout the years supply chains have become multi-tiered and include numerous suppliers, manufacturers, and logistic partners. For these reasons, the use of this technology can help to ensure the legality of raw materials, parts, as well as the distribution line as companies will be able to digitize their supply chain operation, thus opening new possibilities in using AI and machine learning solutions to develop smarter supply chain. Among several other benefits, having smart supply chains would help to preserve their integrity and prevent illicit trade.[85] While the potential benefits of blockchain technologies are clear, it is also important to note that the same technologies are the backbone of cryptocurrencies, which are exploited by illicit traders to conduct their businesses anonymously.[86]

- **Technological solutions to prevent counterfeiting.** There are numerous technological tools aimed at authenticating legitimate products. Some of the most innovative ones include:
    - No visual modification of the product. A recently conceived solution for tobacco products is covert as it entails no visual modification on the product. Depending on the product, tech companies delivering this system propose one of three authentication solutions to be implemented on the different type of tobacco products, where the solutions use a dedicated smartphone application compatible with both iOS and Android.[87]
    - Other companies offer 360° solutions for all major tobacco manufacturers - including serialization, track & trace, authentication and aggregations of items. Each pack, bundle, master case and pallets are marked with a unique code and are linked to each other.[88]

7. Recommendations

The following are focused recommendations to help combat illicit trade in tobacco by governments and private entities:

- **Rationalize tax policies that may lead to smuggling, counterfeiting and production of illicit whites.** As a key driver of illicit trade in tobacco is tax and price differentiation across origin and destination countries, it is critical that these measures do not incentivize illicit trade. Governments should consider adopting simple, single-tier specific tax structures, accounting for various demand-related factors including overall consumption, price, income levels and the affordability of products. Another important factor to take into consideration is the demographic, economic and geographical situation in each country.
- **Coordinate tax policies between neighboring jurisdictions.** Differences in excise and other taxes between neighboring countries and/or tax regimes within the same country (e.g., FTZs) can incentivize contraband and smuggling. Consequently, policy makers from different tax jurisdictions are encouraged to align their tax policies. This becomes particularly relevant between tax jurisdictions that already suffer from substantial illicit trade across their borders and/or distribution channels that connect them. This should be a priority both for origin and destination tax jurisdictions.
- **Initiate partnerships between all relevant stakeholders.** Brand owners, intermediaries, NGOs, etc., should strive to bring about effective change and information sharing to combat illicit trade in tobacco and reduce vulnerabilities through early detection.
- **Mobilize online platforms and their tools.** Online platforms should use the full range of tools at their disposal to support governments and the legitimate industry sector in countering illicit trade in tobacco products. Some actions for platforms include:
    - Implement "know your customer" (KYC) policies.
    - Review the current content posted on their websites and remove illegal postings for the sale and/or transfer of tobacco products.
    - Deploy predictive tools to prevent illicit listings from appearing on the platform.
    - Launch awareness campaigns on smart online purchasing.

- **Provide law enforcement authorities, in particular customs agencies, with greater resources** to:
    - Control borders and blind entry points.
    - Review incomplete/suspicious documentation and sharing information with rights holders.
    - Identify suspicious traders, including the performance of market sweeps (i.e., screening websites to identify breaches of consumer law in each online market).
    - Focus on dodgy bills of lading.
    - In relation to express couriers/postal systems, gather intelligence and implement enforcement actions.
    - In relation to FTZs, target large wholesalers which are not authorized distributors of the legal brands.
    - In relation to online platforms, gather enough intelligence and conduct off-line enforcement.
- **Equip law enforcement agencies with enhanced technology.** While it is impossible to physically monitor, control, and secure borders through manpower alone, the use of advanced technologies, such as unmanned aerial vehicles (UAV), embedded sensors, cargo shipment data mining with risk analytics, next generation surveillance cameras, and robotics have aided customs and border patrol agencies in deterring the flow of illicit trade and smuggling operations involving tobacco products. In particular, x-ray and barcode scanning equipment can be utilized in investigations and surveillance with local law enforcement agencies.[89] By leveraging technology, customs agencies can alleviate some of the burdens associated with managing the large physical scale of transport geography.[90] The use of the deployment of the technology should come with capacity building activities aimed at learning how to use the equipment to tackle illicit trade in tobacco.
- **Impose and enforce sanctions and penalties at levels sufficient to deter criminal activity.** Imposing adequate administrative, criminal and civil penalties for illicit trade in tobacco should be a priority to prohibit illicit traders from exploiting countries and markets with the weakest penal regimes. In addition to court-imposed penalties and fines, consideration should be given to rescinding business licenses from retailers, manufacturers and distributors involved in illegal trade.
- **Raising awareness and fostering collaboration.** Consumers may not be aware of the illegal origin of the products that they purchase and/or the negative impact that the underlying illegal activities may have. Lack of awareness also affects policymakers and law enforcement agencies. This situation undermines multisectoral/interagency collaboration, which is key to tackling illicit trade in tobacco. For these reasons, it is recommended to raise awareness of illicit trade in tobacco threats to health and tax income.

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X. WILDLIFE

1. Overview and findings

Wildlife and illicit trade dynamics

What is illicit trade in wildlife?

Illicit trade in wildlife (ITW) encompasses a wide range of practices, in contravention of national and international norms, which include the offering, distribution, sale, purchase and possession of any specimen of a wild protected species or part thereof.

The ITW can concern either:

- Species whose trade is prohibited in absolute terms; or
- Species whose trade is only allowed in specific volumes or quotas.

The overarching and globally applicable normative framework in this domain is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which regulates the imports and exports of wildlife.

Illicit trade in wildlife (ITW) is a serious threat to local ecosystems and the survival of endangered and vulnerable species. It is also a lucrative criminal enterprise that is present throughout supply chains across the world.

Similarly to other forms of illicit trade, the profits from wildlife trafficking are high,[1] with the value of the products "increasing by multiples of 25 to 50 along the commodity chain."[2] According to the UN Environment Programme and Interpol, the illicit wildlife poaching industry has an estimated value of USD 7–23 billion.[3] At the same time, the UN Office on Drugs and Crime (UNODC) warns that "it is nearly impossible to give an accurate and consistent estimate of the criminal revenues generated by wildlife trafficking."[4] The difficulty to quantify the scope and size of this illicit activity is compounded by the fact that relatively few countries specifically collect data relating to wildlife trafficking.[5]

The impact of the ITW on the population size of protected wildlife is considerable. Numerous species are being threatened as a result of trafficking schemes. The risk is accelerated by traffickers' easy access to online markets where consumers are often unaware or not concerned by the fact that the product they are purchasing contributes to the extinction of entire species populations and the funding of criminal networks.

According to the World Wildlife Fund (WWF), within the past 40 years over 58% of the world's animal populations have decreased, with a 58% decline in vertebrate population abundance and an 81% decline concerning species living in freshwater systems.[6] The ITW is cited as the second biggest threat to species after environmental damage.[7]

Case study: The ivory rush

In 2014, 1,215 rhinos were killed for their horns by poachers in South Africa.[8] Between 2010 and 2012, an estimated 100,000 elephants – or one fifth of the African elephant population – were killed for their ivory.[9] For rhinos, poaching in Zimbabwe and South Africa, which have the largest remaining populations, have increased dramatically from less than 50 in 2007 to over 1,000 in 2013.[10] In March 2016, UNODC reported that rhino poaching in South Africa had increased by as much as 8,000% between 2007 and 2014.[11] According to the Organisation for Economic Cooperation and Development (OECD), rhino horns can earn traffickers up to USD 65,000 per kilogram.[12] UNEP estimates the Asian street value of poached African ivory to be in the range of USD 165–188 million, and the value of rhino horn poached in 2013 alone in the range of USD 63.8–192 million.[13]

The ITW has severe economic impacts too. Organized criminal groups trading in wildlife seriously undermine the business outlook of actors operating in the legal sector. Also, it redirects governments' tax revenue to fighting crime instead of investing in activities that would promote economic growth and employment. The ITW lessens the total amount of tax revenue that governments could be collecting if the criminal enterprises were instead engaging in legal activities.

The wildlife-based tourism industry is especially impacted by poaching activity. Sustainable ecosystems are critical for supporting tourism, which according to UN Environmental Program (UNEP) contributes 5-10% of national economies.[14] In Africa, local economies pay a particularly high toll. According to the World Tourism Organization (UNWTO), wildlife watching and wildlife tourism provide approximately 60% of the income of most regions on the continent.[15]

The economic case for combatting the ITW is exemplified by the elephant, whose estimated value is 76 times more alive than dead. Rather than one elephant's ivory yielding up to USD 21,000, the David Sheldrick Wildlife Trust estimates that that tourism yields from that same elephant could be up to US$1.6 million over the elephant's lifetime.[16]

Case study: Pandemic profits: the surge of illicit wildlife trade during COVID-19 [17]

The COVID-19 pandemic is prompting countries to revisit their approaches to the wildlife trade. Following allegations that the virus responsible for the current pandemic had its origins in a wet market in Wuhan, Asian countries, and China in particular, have come under close scrutiny and international pressure to impose bans on the wildlife trade business.

This resulted in a temporary prohibition and the drafting of laws aimed at a permanent ban. Additionally, in 2020 China removed pangolins – the mammal the is most trafficked from Africa and Asia – from its list of traditional medical treatments. Despite these developments, however, other animal products such as rhino horns and elephant tusks still appear on medicine lists and the illicit trade thereof continues to prosper.

The pandemic has also caused tourism worldwide to drop dramatically. This has contributed to African countries suffering severe economic downturns, which has provided fresh incentives for poaching activities as a means of survival for stretched local communities.

2. *Modus operandi*

2.1 Supply chain modalities

The ITW is typically transcontinental. As highlighted by UNODC, virtually every country in the world plays a role as a source, transit or destination country.[18] Certain types of illicitly traded wildlife, however, are more strongly associated with certain regions. Examples include birds with Central and South America, corals with Oceania mammals with Africa and Asia and reptiles with Europe and North America.[19]

The ITW is characterized by a sophisticated global supply chain[20] that requires a high degree of coordination to ensure that the various phases of smuggling operations successfully end up delivering wildlife products to consumers in destination countries.[21] Often, well-funded organized criminal networks enter the picture after the animals have been poached in order to purchase them, smuggle them (or their parts) and eventually launder the proceeds from the sale.[22] UNODC has found that informal harvesting practices "can allow internationally protected wildlife to be illegally introduced into commercial streams before being legally exported."[23] Also, case studies have shown that "wildlife farms, captive breeding operations, or even zoos may play a role in laundering illegally acquired wildlife."[24]

Typically, wildlife trafficking operations occur in three distinct phases:

- Poaching activity in source countries (especially those rich in biodiversity and/or where law enforcement oversight and criminal justice systems are weaker);
- Transit and transportation (through countries that are used to obfuscate product origin and the end-destination, including trade and transport hubs and/or countries impacted by high levels of corruption);
- Sale in destination countries (where the illegal profits are made).

While African countries represent the origin of about half of the world's wildlife poaching activity, Southeast Asia as a region is estimated to contribute to around 25% of the ITW. Illegally trapped wildlife from across the region are exported and transited taking advantage of fraudulent certification schemes, legal loopholes and public officials' susceptibility to being bribed. As a consumption "hot spot", wildlife products across Southeast Asia are consumed in increasing volumes and sold for growing value due to rising incomes among middle classes.[25]

Case study: From demand to supply: Deciphering the drivers of illicit tobacco trade[26]

A study conducted by the OECD in Southeast Asia has revealed that the consumption and poaching patterns change over time and constantly evolve in response to risks and demand factors. In Thailand, for example, there is strong demand for ivory jewellery, while in Indonesia high volumes of birds are traded in open markets to be used as pets.

The OECD study highlighted four main categories of consumption for illicitly traded wildlife parts, each of which falls within the responsibility of a different regulatory agency:

- Consumption for clothing and luxury items (i.e. luxury goods for display);
- Consumption for health and treatment of ailments;
- Consumption for food and beverage;
- Keeping of live specimens for exotic pets or zoo.

2.2 Transport Dynamics

Both the legal and illegal trade in wildlife most often involves cross-border transportation, be that by air, sea or land. For transport purposes, traffickers rely on networks of complicit officials within customs, immigration and port agencies to avoid detection. Local intermediaries (e.g., packers) contribute to preparing the merchandise for circulation. To disguise the country of origin, containers or shipments are often diverted through third countries. Bills of lading or vessels may be switched.

In terms of maritime transport, two main methods have been identified for the smuggling of wildlife by sea: one is misdeclaration, which occurs when cargo is declared to contain a legal product other than illegally traded wildlife species. Often, traffickers use legal products with low value as a cover-up. The wildlife is then hidden in bags and mixed among the declared goods. Containers' very structure may be modified to hide the illicit trade operation, for example by installing a double wall. The other method consists of forging or altering export/import licenses and other documents to fraudulently authorize the trade in species whose circulation is subject to specific restrictions.

Maritime traffickers may also provide incomplete or fraudulent shipment documentation as a way to conceal information about the real shipper, consignee, ownership, and business activities related to the shipment.[27]

With regards to air transportation, this has become a sought-after channel for traffickers intent on moving wildlife products across countries. Not only is air transport fast and convenient, it also allows large consignments to be broken up into smaller ones, thereby reducing the risk of detection. Most high-value wildlife products are hidden in carry-on or checked-in luggage, or on the passengers themselves at airports. Based on seizure records, most of the illegal rhino horn trade to Asia is carried on passenger air travel.[28]

2.3 Hotspots

2.3.1 Online platforms

Advances in technology and connectivity across the world, combined with rising buying power and demand for illegal wildlife products and the anonymity shrouding both buyers and sellers, enable wildlife traffickers to acquire, ship and sell wildlife products with just a few clicks. As a result, the recent years have witnessed a significant rise in the online illegal trading of wildlife of all kinds, from elephant ivory carvings to live tigers and cheetah cubs, despite these sales being generally illegal and in breach of a site's rules.[29] A type of trade that was once characterized by face-to-face exchanges, now sees transactions predominantly occurring via chat on social media, payments made through mobile banking apps, and live animals or their parts delivered by courier. While online listings are easily accessible, VPN connections serve the purpose of disguising the location of wildlife traffickers. These often engage potential buyers through private groups or encrypted mobile messaging platforms.[30]

Crucially, during the past two years, the combined effect of lockdowns, travel restrictions and wet market closures to contain the COVID-19 pandemic have created further incentives for wildlife traffickers to move their business online.

Case study: Uptick in illegal online wildlife trade in Myanmar

A recent report by the WWF focusing on Internet-powered ITW in Myanmar revealed an escalation in this type of trade.[31] WWF investigators notably monitored Facebook groups and posts from Myanmar in 2021, searching for transactions featuring species protected under the country's 2018 Conservation of Biodiversity and Protected Areas Law or listed under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). Drawing from animal sales posts in both open-access and closed Facebook groups and from personal Facebook accounts belonging to active traders, the investigation offered key insight into ITW patterns affecting the country. The findings highlighted that the online wildlife trade was left largely unaffected by Myanmar's recent social and political turmoil and the COVID-19 pandemic. Users were notably able to easily bypass the sweeping Internet restrictions imposed by the military junta following its coup in early 2021.

- Compared to 2020, there was a 74% increase in the number of wildlife items advertised for online sale, and a 69% increase in the number of traders operating in the country.
- In total, 11,046 wildlife items were identified from 173 different species, including six species listed as critically endangered on the Red List compiled by the International Union for Conservation of Nature (IUCN).

2.3.2 Free Trade Zones

In a 2018 report focusing on "Trade in Counterfeit Goods and Free Trade Zones: Evidence from recent trends", the OECD shed light on the abuse of free trade zones (FTZs) to facilitate a wide range of illicit activities, including organized criminal activity, in illegal wildlife trade.[32]

In another report, the same organization identified major transit hubs in Southeast Asia to funnel illegal wildlife trade products for refining, distribution and sale. It noted, in particular, that "complex transit schemes are used across the region to conceal the origin of goods from authorities, including the use of registered companies to import and re-consign goods in FTZs."[33]

Case study: The Golden Triangle Special Economic Zone (SEZ) as a hotspot for the ITW

Located in Laos's Bokeo Province, the Golden Triangle SEZ is a joint venture between the Lao government and Kings Romans International. While its official purpose is the promotion of tourism and international trade, a report by the Environmental Investigation Agency (EIA), a UK-based NGO, caused the Golden Triangle SEZ to gain a reputation as a hotspot for the ITW. The investigation discovered how ivory, rhino horn, tiger wine, tiger skins and pangolin scales were sold in stores in an area of the complex known as "Chinatown." Live animals and animal parts have been reported at restaurants located in the SEZ.

In 2018, the US Department of the Treasury's Office of Foreign Assets Control (OFAC) sanctioned Kings Romans International for its involvement in trafficking operations for drugs, human beings and wildlife species.[34]

Building on existing research, an investigative report by the Targeting Natural Resource Corruption (TNRC) – a consortium of organizations in anti-corruption, natural resource management and conservation[35] – highlighted enablers and characteristics of corruption schemes and ITW in the Golden Triangle SEZ that are also common to many SEZs/FTZs. These include poor customs controls and insufficient governmental surveillance. According to interviews realized for the report, corruption as an enabler of ITW in the Golden Triangle mostly take the form of officials omitting their duties.

The report also found that, although Lao Law No. 14/2016 on Investment Promotion provides for the possibility to carry out emergency inspections without prior notice in SEZs/FTZs, in practice public officials and managing authorities are regularly notified of inspections in advance. This allows the SEZ Management Board (chaired by the government) and the Economic Board (chaired by the Kings Romans International) to ensure that illegal wildlife products be temporarily hidden.

Moreover, while according to Lao legislation (Wildlife and Aquatic Law No.07/2007 and Decree 188/2019) zoos shall serve either tourism, education, circus performance, cultural exchange or scientific research purposes, interviewees for the report mentioned that the main tiger farm in the Golden Triangle SEZ, reportedly converted into a zoo, has no access to the tourists visiting the area, hence not fulfilling its legal purpose. Law enforcement is believed to be aware of these circumstances and turn a blind eye.

Despite a series of legislative reforms undertaken by the Lao government, a specific challenge affecting the Golden Triangle SEZ lies in the continued uncertainty among authorities regarding jurisdiction issues. In theory, responsibilities for the supervision of SEZs are assigned to the National Committee for Special Economic Zones' oversight. In practice, the National Committee acknowledged that the new management mechanism "has not been well understood and the implementation has not been completed." The lack of clarity provides an additional layer of murkiness to the dealings occurring within the Golden Triangle SEZ.[36]

2.3.3 Postal systems/ express couriers

Wildlife crime networks regularly use the services of mail operators, since most consignments are of relatively small sizes,[37] with express parcel service exploited for sending small and sensitive parcels, sometimes containing alive animals.[38]

Sources consulted for this study indicate also that often high value wildlife products are shipped with regular postal services.[39] In small amounts, national airmail and express parcel service companies are commonly used to send small illicit parcels such as rhino horn.[40] In particular, tortoise and freshwater turtle are primarily trafficked in small batches via post, to limit death in transit.[41]

The abuse of postal systems/express couriers has been illustrated by a number of reported incidents, including:

- Authorities in the Netherlands have repeatedly seized similarly packaged consignments of about 20 kg of scales from Nigeria in parcel post.[42]
- Authorities in Malaysia also seized a series of similarly packed shipments in air cargo from Ghana in 2017.[43]
- Jaguar canines have also been seized in small parcels from Bolivian authorities. While the origin is uncertain, it is clear that these are smuggled through Bolivian borders.[44]

3. Links to organized crime, corruption and other criminal offences

3.1 Organized crime

Wildlife crime has grown into a sophisticated form of transnational criminality. Today, networked actors have entered the market by engaging in industrial-scale sourcing, transportation and sale of wildlife products across entire regions.[45] These developments have been facilitated by, among others, loosely implemented trade prohibitions that create black-market opportunities for criminals, and systems such as access controls and quotas for legal trade that apply in some countries but have no legal bearing in others.[46]

In terms of structure and features of the transnational networks involved in the ITW, a 2020 study conducted by the FATF emphasizes the presence of "multiple distinct sub-networks or actors who each provide specialized criminal services and skills […] While each criminal enterprise will have distinct characteristics, for large scale wildlife trafficking networks, syndicate leaders are often not involved in sourcing the wildlife themselves. Instead, they rely on local controllers based in source countries who oversee the illegal sourcing of the wildlife from various local poachers, breeders, or farmers. Syndicates often choose local controllers who have unique local knowledge or language skills and can hide their financial activities behind the pretence of legitimate business in the country."[47]

Significantly, some of the major wildlife crime syndicates are also involved in other forms of criminality, including drug trafficking, money laundering and loan sharking.[48] Several investigations showed, in particular, a convergence between the ITW and transnational drug trafficking networks and/or illegal logging and associated trade.[49]

The ITW has also been reported as a source of funding for terrorist organizations including Boko Haram, Al-Shabaab and the Lord's Resistance Army. In 2021, the UN Counter Terrorism Executive Directorate (CTED) devoted one of its "trend alerts" to the problem. According to CTED, although the scale of the linkages between ITW and terrorism remains to be determined, researchers and analysts "seem to agree that while the (ITW) might not have been a primary source of financing for these groups, some instances have indeed occurred."[50]

3.2 Corruption

Corruption occurs at every level of the wildlife trafficking supply chain. It is resorted to for a variety of purposes, including to facilitate poaching, obtain falsified import and export permits and ensure that contraband moves easily through customs. Corruption also hinders investigations and prosecutions. The OECD mentions the "large-scale seizures that have taken place at ports, airports and land border crossings where several public sector officials have been arrested for involvement in illegal wildlife trade. Officials accept bribes in exchange for allowing goods to pass through, or to accompany the goods through checkpoints to avoid scrutiny."[51]

In recent years, several inter-governmental organizations have explicitly recognized corruption as an enabler of the ITW. This has been the case, for example, of successive UN General Assembly Resolutions adopted between 2015 and 2021.[52] Other multilateral fora have also issued specific statements in recognition of the role of corruption as a facilitator of the ITW (e.g., the 2017 "G20 High Level Principles on Combatting Corruption Related to Illegal Trade in Wildlife and Wildlife Products"). In 2017, CITES adopted a resolution devoted to "prohibiting, preventing, detecting and countering corruption, which facilitates activities conducted in violation of the (CITES) Convention." This resolution highlights corruption risks in the form of bribery, knowingly overlooking false information on permits, sentencing anomalies in courts, leakages from stockpiles and tampering with evidence.[53]

Case study: Unearthing corruption in the ITW: Operation Dragon

The Wildlife Justice Commission (WJC) is an independent, non-for-profit organization operating globally to collect evidence with a view to helping dismantle transnational criminal networks trading in wildlife, timber and fish.[54] Through its work, the WJC witnesses how corruption facilitates this trade. Operation Dragon,[55] in particular, focused on the illicit trade of turtles and tortoises in five countries in Asia. In addition to revealing instances of corruption of public officials at strategic airports and transport hubs, the investigation documented which ports were "easier" to move products through. The identified corruption schemes were instrumental in ensuring that smuggling operations unfold smoothly without the risk of detection. The investigation also highlighted how, in several instances, the cost of doing business with traffickers included the cost of corrupting local officials.[56]

3.3 Money Laundering

While global proceeds from the ITW have been estimated at between USD 7 and 23 billion per year (i.e., one quarter of the amount generated from the legal wildlife trade), it remains challenging to establish an accurate measurement. The figures obtained through wildlife seizures only represent a percentage of the total amount of proceeds circulating worldwide. Moreover, as highlighted by the FATF, "efforts to detect and quantify proceeds face challenges due to a lack of available and accurate data on wildlife trade numbers, and the fact that criminals often comingle ITW with large flows of legal trade."[57]

Typically, proceeds end up in the country where the heads of the involved criminal network are based (i.e., the destination country or neighboring ones). However, laundering operations may also take place in source and/or transit countries, reflecting the need for traffickers to disguise the illicit origin of proceeds directly stemming from poaching or transport activities. Proceeds may additionally be re-injected into source countries to cover the ongoing costs of criminal activity (e.g., costs for shipping loads or vehicles).[58]

In terms of modalities used for laundering proceeds of the ITW, the countries that provided input to a seminal FATF study completed in 2020 indicated:[59]

- Misuse of the formal financial sector;
- Front companies. These are either companies that perform import-export activities (to help justify the movement of goods and payments across borders) or those with connections to the legal wildlife trade, e.g., farms, breeding facilities, pet shops and zoos;
- Purchase of real estate and luxury goods;
- Money value transfer systems. Informal schemes, such as Hawala, are often community-based. They draw on a network of brokers across countries and enable actors in the ITW to execute international transfers without money physically crossing borders.

Case study: Invisible partners: front companies and their impact on the illicit ivory trade[60]

In November 2013, following a surveillance operation, police in Dar es Salaam, Tanzania's commercial capital, raided a large house in the wealthy suburb of Mikocheni. Three Chinese men were discovered packing ivory tusk sections into sacks with seashells and garlic. In total, 706 pieces of tusks were seized, weighing 1.8 tonnes and valued by the Tanzanian Government at USD 2.5 million. An attempt was made to bribe the arresting officers with USD 50,000 in cash. Shipping documents discovered at the residence indicated previous exports by the group and a suspicious consignment about to leave from the Tanzanian port of Malindi, in Zanzibar. Authorities inspected the suspect container, declared as shells, as it was about to be loaded onto a vessel for transport to Manila port in the Philippines and discovered a further 1,023 pieces of ivory tusks concealed in sacks with shells and garlic. The tusks weighed 2.9 tonnes and were valued by the Tanzanian Government at USD 3.4 million.

Further scrutiny of documents found at the house in Dar es Salaam revealed two Tanzanian registered companies operating at the address. The firms were ostensibly engaged in importing agricultural products and foodstuffs from China and exporting marine products to China. Company records led the Tanzanian authorities to identify two Chinese nationals controlling the companies. Both fled to China soon after the raid.

Initial financial investigations uncovered accounts linked to the two front companies in both US dollars and Tanzanian shillings held with two banks. Transactions analysis showed transfers with four accounts linked to four companies in mainland China and three companies based in Hong Kong. The four Chinese businesses purported to deal in foodstuffs and general import and export. The Tanzanian-registered companies were created as a front to conceal the group's ivory trafficking activities and cover the movement of funds between linked entities in China and Hong Kong.

On a single day, half a million dollars in cash was paid into the main front company account in two tranches, yet no suspicious transaction report was raised by the bank. Lengthy jail sentences were handed down to the Chinese packers and the two Tanzanian dealers, yet the Chinese coordinators, identified through company and financial records, had fled soon after the initial seizure. Although a financial investigation was initiated, it did not lead to money laundering charges, although it did reveal how the main culprits had devised a system of front companies to mask their ivory trafficking activities. The formal banking system was used for transfers between related accounts in both dollars and Tanzanian shillings, but large cash deposits were overlooked by the banks concerned.

3.4 Forced Labor

Limited data is currently available on the extent to which trafficking in persons – including for the purpose of forced labor – is used along the supply chains for the ITW.

Reportedly, young women from Asia have been trafficked to South Africa as part of the sex trade. The same woman have also been used for a fraud scheme declaring them as big game hunters to retain hunting permits and facilitate the ITW from Africa to Asia.[61] In addition to highlighting an example of human exploitation in the context of wildlife trafficking operations, this case provides further evidence of how different types of illicit trade are often found to facilitate one another at the transnational level.[62]

4. Impact on the UN Sustainable Development Goals

The ITW has both direct and indirect adverse impacts on the SDGs. Below is an overview of how various SDGs are affected.

- **SDG 1.** *No poverty.* The ITW notably impacts target 1.4, which calls for ensuring "equal rights to men and women, and in particular the poor and the vulnerable, to economic resources, as well as ownership and control over land and natural resources." The ITW directly affects legitimate business, primarily by reducing the amount – in terms of both number of species and total numbers – of wildlife available for economic exploitation. This is done in both an unsustainable and quick paced manner.
- **SDG 2.** *Zero hunger.* Combatting the ITW has a significant impact on SDG2, since loss of biodiversity contributes and exacerbates the situation of the chronically undernourished.
- **SDG 12.** *Responsible consumption and production.* The private sector has a key role in ensuring that "people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature" (target 12.8). Businesses can have a significant impact on the purchasing decision and choices consumers make.[63] By discouraging consumers from purchasing illegal wildlife products and products made from endangered species, business can have an important impact on the environment, while at the same time creating significant benefits in terms of consumer trust and brand reputation.
- **SDG 15.** *Life on land.* This goal focuses, inter alia, on the need to "halt biodiversity loss" and calls for urgent and significant action to: protect and prevent the extinction of threatened species (target 15.5); end poaching and trafficking of protected species of flora and fauna and address both demand and supply of illegal wildlife products (target 15.7); and enhance global support for efforts to combat poaching and trafficking of protected species (target 15.C).
- **SDG 16.** *Security and the rule of law.* The ITW undermines security and the rule of law, and helps finance organized crime and insurgent groups.[64/65] Ivory has been called the new "conflict resource,"[66] and as highlighted by the World Wildlife Fund for Nature (WWF), "ongoing armed conflicts and illicit wildlife trafficking [in Africa] seem to be interlinked, and wildlife trafficking is often used to finance terrorist activities and launder money from other illegal trafficking activities."[67] The need to address these issues is highlighted in SDG 16's (peace, justice and strong institutions) target 16.4, which calls for a significant reduction in illicit financial and arms flows, a strengthening of the recovery and return of stolen assets and the combating of all forms of organized crime.

5. Institutional framework

This section features a selection of some of the most relevant initiatives implemented by inter-governmental organizations and domestic agencies worldwide.

5.1 International policy, regulatory and law enforcement responses

Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)

Ratified by 182 countries and the European Union, CITES sets forth the global legal framework for the regulation of international trade in over 37,000 species of animals and plants. All imports, exports and re-exports of listed species must be authorized through a licensing system, the aim being to ensure that international trade in these species does not threaten their survival.

A specimen of a CITES-listed species may only be imported, exported or re-exported from a State Party on condition that the appropriate document has been obtained from the competent authority (CITES Management Authority) and presented for clearance at the port of entry or exit.

Protected species are listed in three Appendices,[68] which are subject to periodical update, depending on the extent to which trade is allowed:

- Appendix I includes species whose international trade is prohibited except for very limited non-commercial purposes, e.g., scientific research, educational or law enforcement purposes;
- Appendix II reflects species whose international trade needs to be controlled to prevent endangering their survival;
- Appendix III contain species included at the request of a party that already regulates trade in those species and requests the cooperation of other parties to prevent unsustainable or illegal exploitation.

For its implementation, CITES' normative framework depends on its parties' adopting the necessary domestic legislation and regulations. Any transaction conducted in violation of such regulations needs to be subjected to criminal sanctions.

International Consortium on Combating Wildlife Crime (ICCWC)

ICCWC is a collaborative effort among five inter-governmental organizations for the protection of wildlife species against illicit trafficking and other crimes. The partner agencies to ICCWC are the CITES Secretariat, Interpol, UNODC, the World Bank and the WCO.

ICCWC works directly with frontline officers from national agencies responsible for wildlife law enforcement and criminal justice authorities by building long-term capacity and providing them with the tools, services and technical support needed to combat wildlife crime.[69]

Interpol/ World Customs Organization

Operations Thunder

Operations Thunder target wildlife and timber crime. They are jointly coordinated by the WCO and Interpol with the support of the CITES Secretariat and the International Consortium on Combating Wildlife Crime (ICCWC). The latest operation was run in 2021 and involved customs, police, financial intelligence units and wildlife and forestry enforcement agencies in 118 countries.

Since the first edition in 2017, Operations Thunder have seen some 8,000 seizures of protected wildlife species and the arrest of more than 3,000 offenders. Thousands of cars, trucks and cargo ships suspected of transporting protected wildlife were searched at checkpoints in all regions, often with specialist sniffer dogs and X-ray scanners.

The 2021 operation, crucially, led Mexican authorities to arrest three Chinese nationals who were Totoaba bladders, sea cucumber and coral along with methamphetamine and cash. The seizures provided further indication that a single criminal network is often engaged in the contraband of different goods, in this case drugs and wildlife products.[70]

International Maritime Organization (IMO)

Although IMO is not the lead agency for the prevention and suppression of the ITW (or the illicit trade in other goods), the Organization recognizes that failure to take appropriate measures to prevent the carriage of such products on board ships might lead to seafarers or ships being delayed, including for legal proceedings.

Guidelines for the Prevention and Suppression of the Smuggling of Wildlife on Ships Engaged in International Maritime Traffic

In May 2O22, IMO's Facilitation Committee (FAL 46) approved a new set of guidelines to serve as a tool to combat the ITW in the maritime sector. The guidelines provide extensive recommendations for both government agencies and the private sector to address the ITW whenever this exploits the maritime shipping industry. Every Contracting Government should notably establish a national maritime transport facilitation program to ease trade exchanges while combating illicit activities.

Financial Action Task Force (FATF)

In June 2020, the FATF issued its first report on the ITW urging governments to devote more resources and attention to the financial aspects of this transnational form of organized crime. The report recommends that financial flows linked to the ITW be tackled proportionally to the level of assessed risk in each country. It also calls for increased cooperation between government agencies and the private sector.[71]

European Union (EU)

Wildlife Trade Regulations[72]

The expression "Wildlife Trade Regulations" is shorthand for a set of normative provisions adopted at the EU level whose main objective is the implementation of CITES' regulatory framework in the EU space:

- **Council Regulation (EC) No 338/97** (Basic Regulation) lays down provisions for import, export and re-export as well as internal EU trade in specimens of species listed in its four Annexes. It sets forth the procedures and documents required for such trade and outlines the sanctions to be imposed for non-compliance.
- **Commission Regulation (EC) No 865/2006** (Implementing Regulation) lays down detailed rules for the implementation of Council Regulation (EC) No 338/97. It also implements the bulk of currently applicable recommendations of the Conference of the Parties on the interpretation and implementation of CITES provisions.
- **Council Regulation (EC) No 338/97** (Suspension Regulation) enables the Commission to restrict the introduction of species into the EU following consultation with the countries of origin and the opinion of the Scientific Review Group.

5.2 Selected national responses

US Fisheries and Wildlife Service

In recent years, the US Fisheries and Wildlife Service has implemented a comprehensive wildlife law enforcement program. This includes the stationing of inspectors at ports across the country, provision of enforcement training around the world and an increase in consumer awareness through outreach to travellers going abroad and consumers of exotic wildlife domestically. The Service relies on several mechanisms to help combat the ITW on the ground, including a citizen crime reporting platform.[73]

Uganda's National Strategy to Combat Poaching, Illegal Wildlife Trade and Trafficking of Wildlife and Wildlife Products 2020-2029

Developed under the aegis of Uganda' Ministry of Tourism, Wildlife and Antiquities, the Strategy is the first one of this kind to be released in the country. The document recognizes the significant potential of wildlife tourism to the socio-economic transformation of Uganda, considering that the country is home to a variety of wildlife attractions (including 53.9 percent of the world's mountain gorillas and 7.8 percent of the world's mammal species).

The Strategy focuses on providing policy level interventions that: i) supplement ongoing efforts to combat poaching at field and national level; ii) guide inter-agency and cross-border collaboration efforts; iii) strengthen institutional, technological and human resources capacities for efficient law enforcement, surveillance operations and management of wildlife crime; iv), mobilize financial and technological resources.

It is expected that by 2029 the Strategy's implementation will result in: i) increased national capacity for combating the ITW; ii) reduced incidences of poaching, illegal trade and trafficking in wildlife and wildlife products; iii) improved institutional and stakeholder collaboration and coordination; iv) increased civic action.

Under the Strategy, the National Wildlife Crime Coordination Committee has been established as a multi stakeholder coordination mechanism overseeing the overall implementation effort. The Committee is comprised of representatives of CITES authorities, enforcement and investigations agencies, customs and others, and acts under the direction of the Ministry of Tourism, Wildlife and Antiquities.[74]

China's ivory trade ban

In 2018, China closed down its ivory markets by banning all ivory trade in the hopes of reducing the illegal poaching of elephants and curbing the illegal ivory trade.[75] This was followed suit by Hong Kong (China's SAR) also declaring that it intended to stop all ivory trade in the country by 2021. China's move raises hopes that neighbouring countries (which are still hotspots for illegal ivory trading) will follow suit.[76]

Case study: Cracking down on ivory smuggling: Coordination among the US, Thailand and Kenya

The US Fisheries and Wildlife Service has collaborated with the Freeland Foundation on a training and joint poaching investigation by the Kenya Wildlife Service and Royal Thai Police officials, supported by the Lusaka Agreement Task Force (LATF). The latter is an inter-governmental organization aimed at facilitating cooperative activities by the member states to the Lusaka Agreement, particularly investigations on violations of national laws pertaining to the ITW.[77]

As a result of this investigation effort, several large shipments of ivory were detected and seized at Kenya's Jomo Kenyatta Airport prior to leaving the country. This project enabled the coordination of Kenyan, Tanzanian and Thai law authorities to trace ivory shipments recently seized in Bangkok back to the country of origin to identify international smuggling routes.[78]

6. Business initiatives and public-private partnerships

6.1 Steps, initiatives and measures

Although much work remains to be done, over the past few years various intermediaries in the physical and virtual world (e.g., service providers, logistics companies, financial institutions, online platforms) have stepped up their efforts to ensure that the segments of the supply chain that they control are not exploited for ITW purposes. Crucially, companies are beginning to frame the ITW not only as a conservation issue to be handled by corporate social responsibility departments out of ethical or image concerns, but also as a direct threat to their businesses. When legitimate transport operations are exploited by wildlife traffickers, companies are indeed exposed to both legal and reputational risk, often resulting in rising supply chain monitoring costs.

Case study: Connecting the dots: DHL's integral role in ITW control[79]

Recognizing the ITW as a transport-intensive activity, DHL is taking a number of steps to ensure that its infrastructure is not abused by traffickers. These steps include:

- Educating logistics personnel on the dangers of the ITW and how they can contribute to mitigation efforts. With the support of TRAFFIC, DHL Express Teams are trained on how to detect suspicious packages (e.g., recognizing shapes and spotting suspicious outlines of popular trafficked parts like horns, skeletons or bones of live animals);
- Updating Standard Operating Procedures, for example by including processes to identify and report evidence of trafficked animals to law enforcement authorities. In hot-spot locations, DHL Express Teams also profile shippers and engage the local police for immediate seizures of illicit shipments;
- Implementing a strict recruitment policy, which includes screening candidates' backgrounds.
- Adopting a legally-binding code of conduct that requires employees to address the ITW and establish whistle-blowing policies or helplines to protect the integrity/ anonymity of those who wish to report suspicious activities;
- Establishing voluntary codes of practice at the country level. In 2019, for instance, DHL Express signed such a code to refuse delivery of illegal wildlife and products thereof with 13 other courier and logistics companies in China.

As highlighted in a study conducted by the Basel Institute on private-sector engagement in the fight against the ITW, "there are signs that this can lead to a virtuous circle and organic growth in engagement and activity. […] In turn, the more companies have examined their ITW risks, the more active their engagement in the initiative is reported to have become."[80]

Multistakeholder initiatives and public-private partnerships whose main focus is action against ITW include, notably:

United for Wildlife (UfW)[81]

Founded in 2014 by Prince William and The Royal Foundation, UfW encourages public and private actors to work collaboratively against the ITW through the sharing of information and best practices across sectors and borders. Together, involved entities represent significant proportions of the shipping, airline and financial industries. Under UfW, two taskforces have been established, which, collectively, have trained 85,000 employees in countering ITW practices, supported more than 250 investigations and contributed to 124 arrests.

United for Wildlife (UfW) Transport Taskforce[82]

Created in 2015, this Taskforce is composed of 121 members including representatives of customs agencies, container shipping companies, airlines, logistics companies and freight forwarders, as well as representatives from conservation and anti-trafficking organizations.

The Taskforce helps transport companies understand how they might unintentionally play a role in facilitating the ITW and identify ways in which they may break the illegal chain between supply and demand. Taskforce members are required to sign the Buckingham Palace Declaration, which commits them to: i) Secure information sharing systems for the transport industry to receive credible information about high risk routes and methods

of transportation; ii) Develop a secure system for passing information about suspected ITW from the transport sector to customs and law enforcement authorities; iii) Notify law enforcement authorities of suspected cargoes and, where possible, refuse to accept or ship such cargoes.[83]

The core of the Taskforce activity is the Information Sharing System (ISS), which provides case-specific intelligence alerts and regular strategic information bulletins on trafficking trends, typologies and red flags to Taskforce members. Driven by member feedback and requests, the ISS disseminates monthly bulletins on ITW issues of high concern to Taskforce members.

United for Wildlife (UfW) Financial Taskforce[84]

Launched in 2018, the UfW Financial Taskforce works along the same principles outlined above for the Transport Taskforce. This includes reliance by its members on an ISS for the sharing of strategic and operational intelligence, which is critical to implementing ITW risks and red flags into existing company risk and security management processes. The Financial Taskforce is currently composed of 44 members, among which several banks and financial institutions. Members are expected to sign the Mansion House Declaration, which commits them to implement "appropriate measures" to "improve the identification and reporting of this crime and contribute to the global fight against ITW."[85]

Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) Partnership[86]

Established in 2015 by USAID and led by TRAFFIC, ROUTES assists the transport sector in its efforts to reduce the ITW via maritime, land and air channels. Within its framework, governmental agencies, the transportation and logistics industry, international conservation organizations and donors collaborate on various activities, including the conduct of technical assessments at international airports. The assessments, which are undertaken by experts from the WCO and the International Air Transport Association (IATA), aim at raising the level of awareness among key players of the potential misuse of air freight services by traffickers, evaluate the adequacy of the procedures in place, the identification of best practices, etc.[87]

Coalition to end wildlife trafficking online[88]

Launched in 2018, the Coalition gathers 47 tech companies around the shared objective to mitigate the online ITW by harmonizing prohibited wildlife policies, training staff to increase detection capabilities, enhancing automated detection filters and educating and empowering users to report suspicious posts. To measure the effectiveness of its mitigation efforts, the Coalition relies on a series of indicators, including:

- The number of listings removed (on traditional e-commerce platforms);
- The number of posts, accounts and groups removed (on social media platforms);
- The number of company enforcement staff trained to detect illegal wildlife;
- The adoption by companies of strong and visible wildlife-related policies;
- Company communication efforts to educate users, such as with pop-up alerts and redirection;
- The inclusion of the Coalition's list of key search terms in block filters adopted by companies.

Case study: Airports as frontlines: aviation's integral role in ITW control

In recent years, many airlines such as Emirates Sky Cargo, US Airlines, Virgin and Delta Airlines banned all lion, leopard, elephant, rhinoceros and buffalo trophies from their cargo holds. United and American Airlines quickly followed. US embargoes matter as American citizens represent the largest proportion of hunters. Other carriers have also added their names to the list of those that have banned trophy carriage. These include British Airways, Air Canada, Air France, Brussels Airlines, KLM, Lufthansa, Qantas, Qatar Airways and Singapore Airlines.[89]

In 2016, the International Air Transport Association (IATA) unanimously endorsed a resolution denouncing the ITW and pledging to partner with government authorities and conservation organizations in the fight against the trafficking of protected species.

IATA is among the signatories to the UfW Transport Taskforce Buckingham Palace Declaration, which has also been signed by 61 individual airlines and a number of other aviation stakeholders.

In June 2015, IATA signed a Memorandum of Understanding with CITES to enforce co-operation to reduce illegal trade and ensure safe and secure transport of legally traded flora and fauna. Under the Memorandum, customs officials, scanners, baggage handlers and dogs have all a role to play in detecting illicit wildlife items. Dogs, in particular, are increasingly being used at airports to detect trafficked wildlife and wildlife products by screening checked-in and hand luggage, freight and travelers.

IATA is also a core member of the ROUTES Partnership.[90]

6.2 Business driven technological solutions

In 2018, the Royal Society issued a report indicating that advances in science and technology offer major opportunities to tackle the ITW. Promising tools are emerging from many different fields, from novel fingerprinting kits for ivory to artificial intelligence to spot suspicious cargoes and portable devices that use genetics to identify wildlife products.[91]

Generally speaking, in the ITW space technological solutions can have applications in the field, at borders and online:

- **In the field**, the ultimate goal is to prevent poachers from killing endangered species. Wildlabs offers the example of an open-source facility – supported by Google and ARM – established to build an online community among those involved in conservation and develop technological solutions. Within its first year of existence, the initiative grew to a community of over 1,300 members collaborating to develop new hardware technologies. These include an acoustic monitoring device for tracking wolves and an automatic elephant detector using machine learning. Members also play a role by crowdsourcing answers to questions ranging from low-cost wildlife tracking tags to self-powered camera traps.[92]
- **At borders**, technology is used to enhance governments' ability to detect ITW flows. WildScan, for example, was developed as a user-friendly mobile phone application to support front-line enforcement officers in West Africa in the identification of wildlife species and products being trafficked across borders. WildScan features a library with more than 250 endangered animal species commonly smuggled into and throughout Southeast Asia.[93]

- **Online**, technological solutions aim to increase detection and removal rates for accounts and posts advertising and selling illegal wildlife products. For example, the Coalition to End Wildlife Trafficking Online maintains a multilingual library of keywords that have been identified as being commonly used by sellers to evade detection as well as by buyers to search for prohibited wildlife products. Coalition members incorporate these wildlife-specific keywords into their automated text identification filters.[94]

It is worth noticing that solutions originally conceived for the "human" space can be adapted and find interesting application in the ITW domain. For instance, a car park sensor can be adapted to recognize the number of a certain species in a protected area; facial recognition technology used by social media has been recently applied to the tracking of chimpanzees being sold online.[95]

Artificial intelligence-based solutions can also add leverage to a number of technologies that are already in place. For example, camera traps exist in animal habitats which, using smart sensors, turn on and capture images of animals of interest for researchers and conservationists. This data can be used to train algorithms that recognize animal species. The same technology could also be potentially applied at borders to determine if live animals passing through customs should be there or not, or to detect illegal products. Current research studies are trying to determine if artificial intelligence can be used to recognize text which could aid in verifying paperwork for the cross-border transportation of animals.[96]

7. Recommendations

The following are focused recommendations to help combat the ITW by government and private-sector entities.

- **Improved awareness and education about the nature and impact of ITW.**
  One of the most powerful tools for combatting the ITW is public conservation outreach and education, i.e., to persuade consumers to make informed choices when buying wildlife-based products. This includes not just the people buying the end product, but also shopkeepers, suppliers and manufacturers. Non-governmental actors, especially those working closely with civil society, have a role in providing visibility for illegal wildlife trade cases in the media and among communities to raise awareness.

  In addition to consumers, awareness-raising programs and informative working sessions should target law enforcement, regulatory agencies and other relevant institutions with mandates and responsibilities in tackling ITW. As they collect and evaluate data and intelligence with a view to taking strategic and operational/prosecutorial decisions, these institutions should understand the context in which they operate, such as traffickers' profiles, trafficking dynamics, species at risk, etc. Moreover, awareness-raising initiatives should ensure that involved agencies appreciate the need to protect less high-profile species (e.g., those that are not the object of any specific media campaign), which are nevertheless in danger as their trade is restricted under national or international legal frameworks.

Case study: The power of young advocates: Enabling children to take on ITW[97]

One method that WWF is exploring to combat the ITW is by mobilising children through classroom resource platforms. These resources enable teachers to educate pupils about the threats posed by ITW and also encourage them to explore solutions to tackle the same, from the use of sniffer dogs to the development of new technologies. Simple activities are provided to help students develop a better understanding of the issues at stake, to formulate their own ideas and opinions and to reflect on how their own actions can help to protect natural ecosystems.

- **Better understanding of ITW as an organized criminal activity and application of adequate criminal sanctions**

  As highlighted by RUSI, until ten years ago "wildlife crime was largely considered a niche regulatory issue of concern only to conservationists […] In many locations, wildlife crime remained (and in some cases remains) lightly criminalised. Only in the past few years have concerted efforts been made to establish the status of wildlife crime as organised crime on an international scale. These efforts have contributed to a shift in the way wildlife crime is viewed and addressed. At the national level, many states have sought to establish the status of wildlife crime as transnational organised crime, initiating robust institutional responses."[98]

  Despite the improvements, a lot remains to be done in terms of enhancing the effectiveness of criminal justice systems. In many countries, legal frameworks remains patchy, efforts to prosecute ITW cases unsystematic and courts unable or unwilling to hand down penalties that serve as deterrents.

  From a normative perspective, countries should ensure that their wildlife protection regulatory frameworks comply with CITES requirements and make direct reference to all CITES category species (with the application of distinct regimes depending on the category) as opposed to relying on domestic legal systems that only list a limited number of wildlife species.

- **Increased attention to the financial aspects and consequences of the ITW**

  Most institutional efforts to mitigate the ITW and prosecute related offenders neglect the "follow-the-money" component. For example, wildlife related offences may not be statutorily listed as predicate offences to money laundering; financial intelligence is not sufficiently gathered as part of investigative strategies to track the assets of trafficking networks and/or identify specific trends and risk factors that could support decision-making processes; use of freezing and confiscation powers – when they exist on paper – to deprive offenders of proceeds of wildlife crimes is still a rare occurrence, including because practitioners are unfamiliar with such mechanisms.

Recommendations for governments and law enforcement authorities include:[99]

- Establish ITW-related offences as predicate offences to money laundering;
- Conduct parallel financial investigations systematically as part of an overall strategy aimed at depriving traffickers of their ill-gotten gains;
- Provide for and utilize existing powers to freeze, seize and confiscate instrumentalities used to commit ITW-related crimes and proceeds thereof;
- Prosecute wildlife crime under proceeds-of-crime legislation in addition to "ordinary" wildlife-related offences to increase the likelihood of convictions and maximize the deterrent effect of criminal sanctions.

Critically, as highlighted by the FATF, "even countries without significant wildlife resources should consider whether criminals might be using their financial or non-financial system to launder proceeds from ITW. In other words, transit, destination or third countries should consider assessing such risks. This could be done as part of a national money laundering risk assessment, or through a targeted thematic study."[100]

- **Strengthened inter-agency coordination**

  The development of effective collaborative/information-sharing arrangements linking a wide range of domestic institutions – including law enforcement, regulatory agencies (e.g. CITES management authorities), financial intelligence units and "non-traditional" actors such as anti-corruption authorities – is key to grasp the full picture of ITW dynamics at play in a country. From a criminal justice perspective, inter-agency coordination is also instrumental in expanding the reach of current investigations and widening the net of suspected traffickers and their affiliates.

  However, according to data collected by the OECD across Southeast Asia, while some governments have formalized multi-agency task forces in response to the rampant ITW phenomenon and under pressure from international agencies, little or infrequent use of these structures has been recorded. As a result, pro-active investigations are rarely launched and most wildlife crimes – if investigated – are done so in silos.[101]

  Effective domestic inter-agency coordination is also predicated on the existence of an acceptable degree of integrity and transparency in the way individual agencies operate. Measures need to be enhanced to combat corruption not only in law enforcement and criminal justice institutions (e.g., customs, the judiciary), but internal integrity reviews also need to target actors such license granting officers.

- **Increased law enforcement resources and capacity**

  In many countries, customs authorities still have limited capacity and tools to carry out effective container risk assessment and profiling processes. Checks on shipping documents are often conducted manually. This can result in poor due diligence on shippers and consignees as well as low detection rates of illegal shipments. It is therefore essential for governments to equip customs and border agencies with adequate tools (technological, human) leading to the development of more accurate "red flags" pointing to suspected ITW practices.

Specialized training should be offered to front-line officers to support them in the detection of wildlife species as well as illegal products made from protected species. National training curriculums for law enforcement agencies should also be reviewed having the ITW in mind.[102]

Moreover, as recommended by the OECD, the integration of significantly more CITES authority environmental enforcement officers at ports of entry should be considered in view of the fact that national points of entry are often the last and only line of defense against the entry and sale of illegal wildlife trade products.[103]

- **Proactive and expeditious international cooperation**

  As in the case of most trafficking operations for various types of goods, the vast majority of large-scale illegal wildlife syndicates operate across borders. Often, complex criminal schemes span multiple countries and even continents. As a result, international cooperation is a vital tool for the exchange of information about threats and trends in support of governments' decision-making processes, the development of red flags for use by border agencies, etc.

  International cooperation is also critical for the successful identification, investigation and prosecution of ITW practices. Several bilateral, regional and multi-lateral avenues are available to this effect, ranging from mutual legal assistance treaties to informal law enforcement networks. Especially in the case of the ITW, the use of fast and effective cooperation channels is of paramount importance as delays can be fatal to living wildlife while in transport.

  Based on the analysis of several cases reported by member countries, a 2020 FATF report on money laundering and the ITW found "the significant value of ongoing co-operation between jurisdictions that are linked as part of an ITW 'flow' (finances and/or products). Such ongoing co-operation can encourage proactive sharing of information, facilitate productive joint investigations of ITW syndicates, and ultimately lead to high value seizures and arrests. […] Similarly, productive bilateral relationships between law enforcement agencies of neighbouring countries can help in the establishment of leads in the early stages of an investigation."[104]

- **Better monitoring of online platforms**

  The nature of the ITW conducted via online platforms – with its high volume of posts and members and the thick veil of anonymity shielding both buyers and sellers – makes it particularly hard to mitigate. The challenge is made more acute by the fact that where an illegal post is removed from a site, it often appears elsewhere within a short time. As more traders and consumers rely on the Internet to fulfil their demand and supply for illegally traded wildlife, it is a critical to ensure that wildlife traffickers do not exploit regulatory loopholes as well as inadequate online detection tools and capabilities.[105]

  E-commerce and social media companies should systematically monitor their platforms for illegal wildlife trading, including by creating country-specific monitoring teams, and take prompt action when they come across cases or when these are reported by users. Intermediaries in the virtual world should also expand their use of automatic detection tools based on images or trade term typically utilized by trafficking networks. These tools should include key terms in multiple languages.[106]

- **Expanded and deepened engagement with private sector and civil society organizations**

  A study conducted by the Basel Institute revealed a mixed situation with regard to the degree of private-sector engagement in ITW mitigation efforts. While some business stakeholders are mobilized and committed to promoting and implementing initiatives such as the United for Wildllife Taskforces and the ROUTES partnership, key industry sectors have notably remained unrepresented. Remarkably, freight forwarders and land transportation companies appear to be absent from major ITW-related initiatives. Similarly, local banks and mobile money services are missing from ITW initiatives leveraging the financial sector.

  It is thus essential for Governments to encourage the participation of a critical mass of companies across the board to ensure the implementation of minimum standards (e.g., on customers' due diligence) as a means to reduce opportunities for wildlife traffickers to exploit the weakest links. To support the business case for engaging in collective efforts in this domain, the above-mentioned study recommends measures such as fleshing out ITW-relevant risk categories and creating tailored risk maps for specific sectors. It also suggests use of innovative tools such as bringing a range of companies together for war-gaming scenarios around a simulated wildlife trafficking case.[107]

  The creation of sustained public-private partnerships (including not only industry stakeholders, but also civil society organizations) in instrumental in ensuring accurate risk assessments. All entities involved in combating wildlife-related crime should collaborate in developing red flags and sharing typological information and identified risk factors. In order to contribute to this effort, private sector entities should refine their capacity to implement greater safeguarding measures against trafficking risks. Practical tools have been elaborated for this purpose. *The Red Flag Compendium for Wildlife and Timber Trafficking in Containerised Cargo,* for example, is a practical guidance recently developed by TRAFFIC and WWF for use by the shipping industry.[108]

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PART 3: CONSOLIDATED CROSS-SECTOR RECOMMENDATIONS

I. General recommendations on illicit trade

The general recommendations presented in this report attend to a grander, big picture imperative to propagate illicit trade mitigation remedies widely.

A. Strategies, knowledge, and data

- **Design comprehensive strategies against illicit trade.** In all the illicit trade sectors under consideration, successful mitigation strategies will be most effective when concerted, sustained and joined-up efforts are undertaken by all the responsible government bodies in the legislative, regulatory and operational/law enforcement domains. Those efforts need to be supported by adequate budget allocations and human resources.
- **Deepen the knowledge of the problem.** The size and dynamics of illicit trade as well as the nature and structure of the criminal groups and facilitators involved have not always been systematically researched or quantified. At the same time, the understanding of existing illicit trade patterns, threats and impacts is a pre-condition to set and fine-tune policy and enforcement responses.
- **Develop larger and more accurate datasets.** Bigger and more precise datasets are needed to understand how illicit supply chains work across countries and regions. Significantly more data is required to shed light on financing and payment mechanisms linked to illicit transactions, including cryptocurrency and other alternative forms of payment.

B. Criminal offences and sanctions

- **Criminalize illicit trade conduct.** Countries should criminalize conduct occurring at different stages of the illegal supply chain, notably: (i) manufacturing; (ii) domestic and cross-border trafficking (including by electronic and distance selling); (iii) possession intended (or likely) to be used in manufacturing or placing in the supply chain. Countries should also consider adopting sanctioning mechanisms for failure to report known or suspected illicit transactions.
- **Impose and enforce criminal sanctions at levels sufficient to deter criminal activity.** Imposing sufficiently severe criminal penalties for illicit trade conduct across as many countries as possible should be a priority to limit opportunities for illicit traders to exploit jurisdictions and markets with the weakest penal regimes.
- **Provide supplementary (non-criminal) sanctions.** In addition to criminal penalties, consideration should be given to:
    - Rescinding business licenses from retailers, manufacturers and distributors involved in illicit trade.
    - Imposing prohibitions on bidding for public procurement contracts.
    - Sanctioning ineligibility to receive subsidies or credits.
    - Seizing infrastructure used in illicit trade practices (e.g., in the counterfeiting sector, seizing machinery used to manufacture fake products).
- **Tackle corruption as a major enabler of illicit trade.** As long as corrupt practices persist within government agencies, any attempt to improve and strengthen enforcement actions will have limited effect. Corruption at the border is perceived as a serious non-tariff trade barrier hampering economic growth and trade performance. Recent figures from the OECD show that improving integrity policies in customs alone has the potential to reduce trade costs by 0.5% to 1.1%. Governments are thus encouraged to devote significantly more resources on tackling pervasive corrupt practices, especially at the level of customs, regulatory/inspection agencies, law enforcement authorities and the judiciary.
- **Tighten controls on money laundering.** Illicit trade generates a considerable amount of proceeds that traffickers launder through a variety of mechanisms including bulk cash smuggling, use of middlemen/ facilitators, shell companies and tax havens, bribery of bank officials, cycling cash through legitimate businesses and cash purchases of luxury goods. Denying access to entities and mechanisms used to launder proceeds of illicit trade-related offences requires a comprehensive and holistic anti-money laundering regime, which includes, as a minimum:
    - The establishment of illicit trade-related offences predicate offences to money laundering.
    - Powers to freeze, seize and confiscate instrumentalities used to commit those offences and proceeds thereof.
    - Equipping regulatory and criminal asset management bodies with the resources needed to effectively handle seized and confiscated assets.

C. Smart and innovative prosecutorial strategies

- **Prioritize illicit trade in prosecuting and sentencing guidelines.** A country's investigative and judicial bodies should define clear prosecuting and sentencing guidelines to ensure that the criminal justice response to illicit trade offences is prioritized and that the imposed penalties reflect their grave nature of the crime.
- **Consider a wide spectrum of criminal charges against illicit trade.** When they make their charging decisions, prosecuting authorities should consider as wide as possible a range of criminal offences available in domestic criminal law statutes. Depending on the circumstances and context of each case, available charging options worth exploring include smuggling, corruption, money laundering, piracy, pillage, and environmental degradation.
- **Follow the illicit trade money.** It is critical for governments to establish dedicated financial investigators to maximize the chances of building successful cases leading to identification, freezing and confiscation of illicit financial flows. Financial investigations should be conducted systematically and run parallel to those launched to investigate the predicate offence. At the same time, investigations could be greatly facilitated by the enactment of new financial-sector regulations, notably aimed at creating registries of beneficial owners and placing limits on the use of shell companies.

D. Inter-agency coordination, information-exchange, treaty actions

- **Increase domestic coordination and operational data-sharing.** The development of effective collaborative arrangements linking a wide range of domestic institutions—including law enforcement, regulatory/inspection agencies, financial intelligence units and "non-traditional" actors such as anti-corruption authorities—is key to grasping the complexity of illicit trade schemes and launching effective investigations. Domestic government agencies need to establish strong working patterns based on systematic exchange-of-information practices. To acquire a full picture of illicit networks and dynamics, information stemming from several agency-specific datasets needs to be leveraged, shared and cross-checked.
- **Leverage international cooperation channels and global law enforcement platforms.** International cooperation among agencies from different countries is key to shed light on the cross-border implications of illicit trade schemes and should encompass the sharing of information for a wide range of purposes (operational, criminal justice, risk-assessment, good practices). Several bilateral, regional and multi-lateral avenues are available to this effect, ranging from mutual legal assistance treaties to informal law enforcement networks. To be effective, data-sharing at the international level should involve operational databases and platforms with a global reach, such as WCO Customs Enforcement Network (CEN) and Interpol's I-24/7. The ability of such databases and platforms to concretely support the work of domestic law enforcement agencies critically depends on the accuracy of data voluntarily provided by its members.
- **Perform treaty actions and engage in new treaty negotiations**. A comprehensive approach to illicit trade requires that countries take prompt action to ratify and implement all the international treaties available in the illicit trade domain. They should also actively participate in negotiations aimed at shaping international legal instruments that may be developed in the near future, whether in specific illicit trade sectors or across sectors.

E. Tax policies and subsidies

- **Coordinate tax policies between neighboring jurisdictions.** Differences in excise and other taxes between neighboring countries and/or tax jurisdictions within the same country are powerful drivers for smuggling activity. Typically, when taxes increase to the point that prices exceed consumer purchasing power, illicit goods naturally become cheaper alternatives, illegal production propagates, unsafe products enter the market and tax collections decline. Policy makers from different tax jurisdictions are thus encouraged to align their tax policies. This becomes particularly relevant between tax jurisdictions that already suffer from substantial illicit trafficking across their borders and/or distribution channels that connect them. This should be a priority both for origin and destination countries.
- **Account for multiple demand-related factors in designing tax policies.** Policy makers should engage in sustained dialogue with all stakeholders to ensure that tax policies create shared value for consumers, government, society, and the licit value chain over the long-term. Governments should account for various demand-related factors including overall consumption, price, income levels and the ensuing affordability of products. Another important factor to take into consideration is the demographic, economic and geographical situation in each country, as measures that are appropriate in one place may not be suitable in another.
- **Address product subsidies.** Consider lowering or even abolishing subsidies for goods that are vulnerable to illicit trade as part of the measures needed to remove price differentials across jurisdictions and thus mitigating a key driver for cross-border smuggling activity.

F. Consumer education and empowerment

- **Invest in consumer education and awareness raising.** Sustained efforts must be conducted to educate consumers about the dangers of purchasing illicitly traded goods, especially on the Internet. All available avenues should be used to make consumers aware of the health and other risks from illicitly traded goods and associated social and economic costs.
- **Empower consumers/the public.** National responses to illicit trade should be based upon a robust understanding of the complementary strengths, expertise and resources of different communities of stakeholders, including the public. The latter can play a valuable role, for example, in detecting illicit trade and focusing/ informing enforcement agencies.
- **Consider the establishment of anonymous reporting mechanisms.** In appropriate circumstances, campaigns aimed at raising awareness about illicit trade could promote the use of mechanisms for anonymous crime reporting. Some brand owners already provide forms or email-based mechanisms for reporting suspected infringement.

G. Role of non-governmental organizations (NGOs)

- **Leverage NGOs as intermediaries between governments and civil society.** Addressing illicit trade requires not only effective coordination across government agencies, but also the pooling of expertise and resources from NGOs. As governments may lack effective means to meaningfully engage with affected communities due to geographic isolation, institutional mistrust, or even linguistic and cultural barriers, NGOs can serve as "bridges", for example by supporting awareness-raising efforts. Academic institutions can also contribute pivotal research on illicit trade, including techniques for measurement and analysis of patterns and trends.
- **Draw operational insights from the NGO community.** Due to their in-depth knowledge of local dynamics, NGOs are often in an ideal position to grasp systemic factors (such as weaknesses of labor markets, drivers for smuggling activity, specific vulnerabilities to illicit trade of certain segments of society), as well as provide valuable operational information to law enforcement agencies (e.g., about unusual movements of people and means of transport or suspicious trading patterns).

H. Collaboration with the private sector

- **Develop long-lasting partnerships with industry stakeholders.** Over the years, businesses have significantly developed their capacity to monitor and investigate the extent to which and how their supply chains may be infiltrated by traffickers, goods may be diverted for illicit trade purposes, and intellectual property rights infringed. Any durable solution to the threats of illicit trade, both online and offline, thus depends on sustained collaboration between governmental agencies, including notably law enforcement, and the private sector. In addition to individual businesses, collaborative arrangements should be explored with industry associations, chambers of commerce and other similar bodies.
- **Improve and streamline channels for information sharing between the public and private sectors.** Information-sharing is a key component of the broad public-private partnerships that need to be established as part of a comprehensive approach to mitigating illicit trade. With real-time access to commercial data and private-sector intelligence, enforcement agencies can improve the effectiveness of their operations and fine-tune risk-assessment. In particular, industry stakeholders should be encouraged to share intelligence with law enforcement including known infringing sellers, repeat offenders, evasion tactics, and red flags to allow law enforcement to effectively intercept illicitly traded goods.

II. Supply chain and hotspot-specific recommendations

These were developed by analyzing remedies common to the 10 sectors evaluated in the report as they occur within supply chains and transportation modalities and at the three critical vulnerabilities (i.e., hotspots) that traffickers exploit to advance illicit trade: (i) online platforms, (ii) free trade zones and (iii) postal systems/express couriers.

A. Supply chains and transport

- **Strengthen domestic legal frameworks for supply chain monitoring and protection.** Illicit trade mitigation efforts require adopting/strengthening regulatory measures which are often scattered in different pieces of a country's normative frameworks (e.g., consumer legislation, customs, intellectual property, trade, criminal law). Governments should evaluate the adequacy of often-disjointed measures and processes to mitigate illicit trade and insert illicit trade provisions where appropriate.
- **Enable and equip law enforcement to conduct improved supply chain monitoring.** Customs and other border control agencies have a key role in combating illicit trade at borders, with officers on the front-line conducting inspections and detecting/ seizing illicit goods. It is essential for governments to equip those agencies with adequate tools (technological, material, human/know-how) leading to the development of more accurate "red flags" about suspected illicit trade practices and streamlining detection and inspection procedures. Specific recommendations include:
    - Thoroughly reviewing incomplete/suspicious documentation and sharing information with rights holders.
    - Focusing on suspect or incomplete bills of lading.
    - Empowering customs authorities to take enforcement action to seize or suspend the release of illicit products and those suspected of infringing laws when they are imported, exported, in-transit and in all situations where the goods are under customs supervision, including in free trade zones or other zones with special economic and tax regimes as well as bonded warehouses.
    - Adhering to supply chain security schemes such as the World Customs Organization's Authorized Economic Operator (AEO) program with a view to reducing risk from exposure to illicit activities.
    - Implementing a digitized Customs Recordal System for intellectual property rights to ensure that key information can be easily accessed by enforcement officers.
    - Promoting the adoption of sound, intelligence-based risk-management approaches for the detection of illicitly traded goods by customs agencies. This could be based on the organizational framework and processes outlined in the World Customs Organization's (WCO) Customs Risk Management Compendium.
    - Implementing a comprehensive digital environment for border clearance, based on the notion that automated systems reduce human touch points and opportunities for corruption.

- Ensure a balanced implementation of the World Trade Organization (WTO) Trade Facilitation Agreement to ensure that "quick and easy processing" does not obviate long-standing customs and tariff systems necessary to control illicit trade.

- **Improve international law enforcement coordination.** Countries should enhance their law enforcement capabilities against illicit trade by reaching out to other countries through better information-sharing mechanisms, coordination of joint, intelligence-driven operations such as sea patrols, and the establishment of inter-agency protocols and arrangements to optimize and share law enforcement resources and tools.
- **Empower regulatory/inspection authorities.** Regulatory and inspection authorities should be enabled to assist in the detection of illicit goods by performing risk-based raids and monitoring the market, participating in border control activities for imported, exported, and transiting products, conducting investigations either alone or in cooperation with law enforcement authorities, providing access to testing laboratories and screening technologies, and managing both national and international reporting systems.
- **Raise awareness and train institutional actors**. Awareness-raising programs and informative working sessions should be designed and systematically delivered to law enforcement, regulatory agencies and other relevant institutions with mandates and responsibilities in tackling illicit trade. Specific actions should include:
    - Continuing to promote a shift in attitudes whereby illicit trade is no longer perceived as a victimless crime, but rather one that contributes to organized crime, relies on forced labor, and generates significant proceeds connected money laundering operations.
    - Offering specialized training programs to front-line officers to support them in the detection of illegal products.
    - Reviewing national training curricula for law enforcement agencies to ensure that illicit trade is a central component.
    - Educating intermediaries, both in the off-line and on-line world, on how their infrastructure is vulnerable to and exploited by illicit trade.
    - Training the law enforcement community, especially customs authorities, on distinguishing counterfeits from genuine products and how to report this to brand owners.
- **Deliver technical assistance.** Technical assistance programs, tools and resources should be made available to support authorities, especially in developing countries, to carry out their functions more effectively. Mechanisms should be created for allocating resources to help authorities in complying with international standards, including for the setting up and functioning of data collection and information-sharing mechanisms.
- **Provide law enforcement agencies with enhanced technology for supply chain monitoring and policing.** While it is impossible to physically monitor, control, and secure borders through manpower alone, the use of advanced technologies, such as unmanned aerial vehicles (UAV), embedded sensor, cargo shipment data mining with risk analytics, next generation surveillance cameras and robotics should be considered among the tools to help customs and border patrol agencies deter illicit trade flows.

- **Leverage the power of technology-based solutions for track and trace.** Track and trace solutions can be useful to identify a product's origin and its chain of custody. In choosing the most appropriate traceability solutions, special consideration should be given to adopting end-to-end, electronic (as opposed to paper-based) and interoperable systems (i.e., systems that use a common data format and are able to interpret information based on shared definitions). Adopting technological solutions should be delivered with adequate training packages for those who are supposed to operate them and effective, reliable service support.
- **Enact sound procedures for product storage and disposal.** Suspect counterfeit goods that are under adjudication should be stored in proper facilities that cannot be infiltrated by counterfeiters intending to put the products back onto markets. Once the goods are confirmed to be fake, they should be destroyed in an environmentally friendly manner, without the need for rightsholders to initiate court proceedings. Customs may need to engage with specialized agencies that can transport the illicit goods into their premises for safe dismantling, secure cost-effective storage and immediate destruction for confirmed illicit goods while mitigating the impact on the environment. Additionally, consideration should be given to establishing a mechanism whereby confiscated proceeds of counterfeit offences are placed in a special fund to offset the costs of storage and destruction.
- **Strengthen due diligence policies and responsible sourcing.** Industry stakeholders should conduct detailed due diligence on suppliers, buyers, traders and other contractors. This includes working proactively towards mitigating the risk of illicit trade practices affecting not only their own organizations directly, but also their entire value chain. In this context, understanding how other industries carry out due diligence processes could be valuable. Private-sector entities affected by illicit trade should also adhere to and fully implement available governmental and industry-based guidelines and policies on responsible sourcing. Methodologically, company controls on their supply chains may follow a three-pronged approach based on:
    - Conducting vulnerability assessments.
    - Designing and implementing mitigation strategies.
    - Regularly reviewing illicit trade mitigation systems.
- **Enhance action against forced labor.** Companies should strive to source directly from suppliers with demonstrated compliance to labor laws rather than through intermediaries. Governments should provide adequate financing and capacity building for labor inspectors, who often face remote and dangerous working conditions.
- **Step up due diligence action by intermediaries.** Intermediaries should:
    - Develop and maintain a caution list of fraudulent shippers/clients (e.g., persons, companies, freight forwarding and clearing agents suspected of involvement in illicit trade activities).
    - Ensure the timely provision of shipping documentation to customs agencies to enable effective container/ cargo risk profiling and investigations.
    - Conduct due diligence when hiring new employees to verify their integrity and any potential past involvement in fraudulent activities.

- **Increase transparency and traceability by verifying shipping documents.** Shipping (export/import) documents need to be verified to ensure whether traded goods are legal and registered in the country where they are manufactured and in the country of intended use. Product labels/containers and corresponding shipping documents should contain explicit and unambiguous information about content, origin and destination.
- **Leverage technology to monitor the movement of means of transport.** Law enforcement agencies and industry stakeholders should leverage technology (e.g., satellites) for the purpose of monitoring and tracking vessels suspected of carrying illicitly traded goods such as oil, wildlife or fish. For satellite tracking to work properly, it is important for domestic agencies to run parallel surveillance systems to coordinate their programs and share satellite-generated information. Also, surveillance hardware and capacities need to be improved.
- **Strengthen national and international regulations on vessels and their enforcement.** In maritime transport, key recommendations to prevent ships from becoming tools for illicit trade and other illegal activities include:
    - **Disincentivizing the use of flags of convenience.** To reduce the attractiveness of flags of convenience (i.e., the practice whereby a ship is registered in a country other than that of the ship's owners) by illicit traders, countries should explore the adoption of "Flag State Performance Tables" whereby flag states are ranked according to their compliance with their obligations under international maritime law. A low ranking may create an economic disincentive for cargo owners to avail themselves of vessels registered in underperforming flag States.
    - **Expand the use of Unique Vessel Identifiers (UVI).** Countries should accelerate the process of requiring UVI as an important measure to prevent vessel owners from avoiding detection by resorting to complex vessel naming, registration and incorporation schemes (known as "flag hopping"). Once assigned, the UVI should remain with the vessel throughout its life, ensuring traceability irrespective of changes in flag, ownership, name or other.
- **Enhance the physical protection of means of transport in the maritime domain.** Given that maritime routes represent the most used transport channel for illicit goods, it is critical to improve the ability of domestic law enforcement agencies to address illegal conduct exploiting maritime means of transport. To protect oil-carrying vessels against robbery, for example, shipping companies should systematically review their ship security plans and standard operating procedures by complying with international instruments such as the International Ship and Port Facility Security (ISPS) Code. This includes, among others, the installation of physical ship protection measures, crew screening, conduct of crew briefing/training and maintaining confidentiality of the voyage route whenever possible.

B. Online platforms

- **Extend the regulatory framework applicable offline to online transactions.** While many industries impacted by illicit trade are the object of extensive and detailed regulations when they trade through traditional offline channels, existing laws are often not being applied to e-commerce. In the pesticide sector, for example, the law of 'registration in country of use' is being ignored through online sales, allowing many sellers to trade without proper registration certificates. Countries should thus adopt regulatory frameworks ensuring that online platforms require proof of seller credentials, which includes verifying that vendors have a license to sell the products.
- **Promote a clean digital environment.** Their vulnerability to exploitation and misuse by illicit traders makes it compelling for online platforms to use the full range of tools at their disposal to support law enforcement agencies and the legitimate industry sector in countering illicit trade. E-commerce and social media companies should systematically monitor their platforms for illegal trading activity, including by creating country-specific monitoring teams, and take prompt action when they come across cases or when these are reported by users.
- **Implement more robust "know your customer" (KYC) policies.** Online platforms should be required to implement robust "know-your-customer" (KYC) policies to mitigate fraudulent listings, such as:
    - Improving verification requirements of sellers to know who is trading on their platforms, including physical addresses and other contact information, bank details, and other identity checks such as business license.
    - Requiring sellers to certify their products do not violate registered trademarks, distribution agreements or laws, and agreeing to provide consumers redress, including refunds, when they discover a counterfeit good in the seller's listings.
    - Holding sellers to strict terms of use that forbid engaging in illicit activities and consenting to strong penalties when such terms are violated.
- **Inform consumers regarding third-party sellers.** Online platforms should provide basic information about the third-party seller for each product listing, including basic contact information and country where the product was assembled, along with an easy-to-use mechanism for the consumer to report a suspicious product.
- **Ensure that listings of illicit products are quickly identified and taken down.** Online platforms should strengthen partnerships with law enforcement and brand owners and proactively and promptly remove Internet content relating to illicitly traded goods and product listings. To this end, they should expand the use of automatic detection tools based on images or trade terms typically utilized by trafficking networks. These tools should include key terms in multiple languages.
- **Monitor fraudulent marketing and advertising tactics.** Monitor online promotional initiatives taken by traffickers, who often use the same techniques employed by legitimate marketers and leverage the existing market base built by the legitimate brands, including paid search advertising, links within social media, black hat search engine optimization (SEO) tactics, cybersquatting and spam.

- **Channel online intelligence to inform offline enforcement measures.** Because offline measures such as physical investigations, factory raids and other activities can be costly and time-consuming, it is critical to know where these operations should be focused. Online intelligence can thus help identify the biggest infringers, so that offline law enforcement efforts can be prioritized accordingly.
- **Bar repeat offenders from their online marketplaces and share information about repeat infringers with law enforcement and legitimate brands.** Unfortunately, many bad actors that are removed from an ecommerce platform often quickly reappear a different identity. Online platforms should deter repeat infringers by 1) temporarily or permanently suspending or restricting the seller's account; 2) take actions to prevent re-registration of permanently suspended sellers and 3) cross-check databases with a view towards identifying multiple accounts maintained by the repeat infringers.
- **Launch awareness campaigns, including on smart online purchasing.** Consumers should be better enabled to recognize the most common patterns of illicit trade and products conducted online, and empowered to obtain redress, whether through private dispute resolution mechanisms, consumer protection legislation or the national justice system.

C. Free trade zones

- **Design a regulatory environment conducive to transparent and adequately policed FTZs.** It is critical to adopt measures aimed at enhancing transparency and improving governance in FTZs to ensure that they continue to perform the economic objective for which they have been legitimately created. This entails the adoption of a sound regulatory framework resulting from the following actions:
    - Acceptance of Annex D of the Revised Kyoto Convention and compliance with the guidelines addressed therein on explicit customs jurisdiction over FTZs, rules on origin of goods, customs transit and transshipment procedures.
    - Authority for customs to exercise unrestricted rights to enter and observe day-to-day operations, audit records of companies in the zone, and validate goods status and compliance with tariff and non-tariff measures under the national customs mandate.
    - As many problematic FTZs frequently feature among the list of notorious transit points, special attention should be given to ensuring that goods in transit through these FTZs are well within the scope of local law enforcement agencies.
    - Compliance with the standards enshrined in the OECD's Recommendation on Enhancing Transparency in Free Trade Zones, including the adoption of the Code of Conduct for Clean Free Trade Zones. FTZ operators are also strongly encouraged to actively participate in OECD-sponsored certification schemes that would serve to distinguish compliant and non-compliant FTZs.
    - Empowering regulatory bodies, for example health authorities, to inspect bonded warehouses located in FTZs to ensure that products being stored in such locations retain their integrity and do not enter the distribution system in the internal market of the host country without being imported in accordance with the national law.

- **Implement strong operational measures to protect FTZs from illicit trade activity.** Specific measures notably include:
    - Conduct risk profiling of suspect shipments and ex-officio checks on goods stored and services conducted in FTZs.
    - Extend customs supervision to the FTZ perimeter as well as entry and exit points.
    - Validate the identity of FTZ's economic operators and their clients.
    - Implement "Know Your Customer" and "Due Diligence" measures.
    - Require that FTZs maintain and report statistical data on goods entering and leaving their territory based on their tariff classification and information that identifies the owner of goods.
    - Establish or designate a competent authority to issue licenses to manufacture, import, export, broker, or ship raw materials and other key inputs necessary for production within manufacturing and packaging facilities in FTZs. Such authority should also be responsible for renewal, suspension, and cancelation of the licenses, in accordance with national law.

D. Postal systems/express couriers

- **Improve due diligence at points of entry.** Mail carriers should implement robust verification procedures at the point of collection and delivery of small parcels, including strict verification of national identity cards, business licenses if applicable, address and contact information. Further, mail carriers should ensure that there is proper adherence to customs documentation requirements for import and export. For example, for pesticides proper registration certificates for the use of pesticides in the country of import should be required.
- **Encourage better collection and relay of electronic advance data (EAD).** By collecting and exchanging EAD, customs administrations can leverage the data supplied by the exporting mail carriers to facilitate advance customs decisions and more efficient customs processes. This allows the inbound customs administration to target items of interest in advance, while ensuring continuous flow of legitimate postal traffic. It could eliminate or at least reduce the need for a physical review of items with an advanced "customs release" decision (i.e., pre-clearance). To realize these benefits, it is important for:
    - Mail carriers to collect clear, accurate and complete data in prescribed (by the Universal Postal Union) formats for harmonized data collection and transmission to customs.
    - Mail carriers and customs administrations to develop or maintain IT systems that can effectively communicate with each other. This will allow customs to achieve greater effectiveness in data analysis and successfully target suspect parcels.
    - The joint UPU-WCO guidelines on the exchange of electronic advance data (EAD) between designated operators and customs administrations provides a good framework for EAD collection and relay.

- **Encourage cooperation with e-commerce platforms.** A significant portion of the illicit trade in small parcels is fueled by consumers shopping online. As such, it is important for national posts and customs to work with e-commerce platforms:
    - E-commerce platform operators possess large amounts of detailed information on the description of goods, value, vendors involved, consumers and histories of parties using the platforms. This information is critically useful for risk-assessment. There are, however, few agreements between authorities and online platforms to facilitate information exchange. E-commerce platforms, national posts and customs must create a mechanism that will easily permit data to be exchanged that can help risk profiling systems, EAD relay, and detection of repeat offenders.
    - Mail carriers are encouraged to initiate pilot programs with e-commerce platforms to examine gaps in data collection frameworks and to understand the type of information that governments should be collecting to better target illicitly traded goods, including counterfeits.
- Treat domestic warehouses and fulfillment centers that belong to e-commerce platforms as the ultimate consignee for any good that has not been sold to a specific consumer at the time of its importation. By treating domestic warehouses and fulfillment centers as consignees, customs can enhance their ability to identify illicit goods, as well as use the support of other statutory and regulatory authorities to inspect suspect consignments that **are in the possession of domestic warehouses and fulfillment centers.**
- **Develop a Suspension and Debarment List.** The List should include entities and individuals who have repeatedly engaged in illicit trade practices.
    - Require national posts and express carriers to verify that their customers are not included in the List ahead of initiating any business transaction.
    - Deny services to those in business with people on the List.
    - Condition continued access to "trusted trader programs" on compliance with this verification process that determines whether a customer has been suspended or debarred.
    - Identify non-compliant national posts and express carriers that do not carry verification of those in the List and take necessary rectification actions.
- **Integrate customs screening and examination process into postal processing chains.** This will enable prompt inspection upon arrival to facilitate diverting packages for automated scanning of parcels.
- **Upgrade information technology (IT) infrastructure for screening.** New technologies powered with artificial intelligence, X-ray imaging systems, and other non-intrusive inspection techniques are increasingly proving to be as effective as physical inspection. These systems use several risk profiling data points to pinpoint suspect packages which can then be manually inspected by law enforcement. Technology support is crucial to assist law enforcement in screening the thousands of parcels that are traded across borders each day. Further, adequate technical training is required for border officers to enable them to make effective use of new technologies, particularly those that use big data analytics.
- **Encourage customs authorities to share information back to the carriers** to help them improve risk assessments and to blacklist clients that are repeat offenders.

ANNEX I: METHODOLOGIES

To ensure the accuracy and reliability of its findings and recommendations, the present study followed a rigorous six-step methodology:

1. **Scoping exercise.** At the outset of project implementation, TRACIT performed a scoping exercise to define the boundaries, objectives and key parameters of the project including research methodology and extent of data investigation, collection and analysis. As part of this process, TRACIT identified thge nature and depth of publicly available information pertaining to private-sector approaches to illicit trade, challenges faced and adopted mitigation tactics and measures. This initial phase provided valuable insights into key issues at stake and enabled the project team to frame the categories of information required to populate the study. Additionally, this phase involved the identification of key private-sector actors whose input would be instrumental in achieving the project's objectives. To this end, extensive efforts were made to consolidate information from various mailing lists, constituencies and memberships of TRACIT partner organizations. Finally, this phase guided the preparation of a formatted compilation of interview narratives and questions.
2. **Survey elaboration.** TRACIT developed a comprehensive survey framework consisting of a series of questions for addressing illicit trade in each of the ten sectors under review:
    a. Complexities of supply chains and transportation modalities
    b. Critical aspects of illicit trade in three "hotspots" commonly exploited by illicit traders (online platforms, free trade zones, and postal systems/express couriers).
    c. Intersection of illicit trade with enabling criminal conduct (Links with organized crime, corruption, money laundering and other offences).
    d. Company-specific estimated losses to illicit trade, industry responses to the problem and the extent of reliance on external partnerships.

    The survey framework underwent expert review to ensure its robustness as well as the pertinence and depth of responses that could be expected. The resulting document encompassed a total of 76 questions over 6 sections.
3. **Open source/desk research.** Utilizing the survey questions as a blueprint, the project team conducted an extensive desk research process. This involved a systematic review of publicly available open-source information. Information was examined across various credible sources, including materials published by international governmental organizations (IGOs), prominent international business organizations, research institutes, news reports, independent studies endorsed by reputable universities, and private-sector sources. Furthermore, an in-depth analysis of companies operating in key sectors was conducted by reviewing annual reports, press releases, corporate social responsibility reports, and other relevant sources to gather data pertinent to the survey questions. The desk research also aimed to establish a solid "knowledge base" to guide the subsequent primary data collection efforts.

4. **Primary data collection.** For primary data collection, TRACIT sought qualitative responses from private-sector actors across targeted sectors, using the survey as a foundational tool. This phase leveraged TRACIT's growing network of corporate members who shared a common objective of combatting illicit trade. Information was acquired directly from these members as well as from other companies and trade associations. The survey questions were made available both in hard copy and through an online platform to facilitate widespread participation. Surveys were issued and interviews were also conducted at key events and large stakeholder gatherings. Whenever possible, the data collection process included in-person interviews, taking into account the severe constraints to travel caused by the global response to the COVID-19 pandemic. TRACIT conducted an extensive survey outreach to more than 200 companies and leveraged its network of partner associations, collectively representing over 1500 brands spanning diverse sectors. Additionally, TRACIT conducted interviews with prominent business associations, each leading in their respective fields, to capture the overarching perspectives of their member companies. Due to the sensitive nature of some of the information provided, both the associations and companies participating in this study have chosen to maintain anonymity. The document attributes company names solely in cases where the information is already publicly accessible such as in news reports, company's CSR or annual reports.
5. **Sector-specific data consolidation and analysis.** The information obtained from desk research and interviews underwent thorough examination. Collected primary data sometimes provided new leads, which prompted the project team to conduct further research. This effectively created a second layer of open-source investigation. All information was meticulously consolidated on a sector-by-sector basis, leading to the creation of sector-specific chapters. As each chapter was completed, key experts from the corresponding sectors were invited to review the content.
6. **Cross-sectoral comparison and finalization.** The sector-specific chapters underwent extensive comparative analysis sought to identify commonalities, shared trends, challenges, institutional responses, as well as private-sector remedies and best practices. This "horizontal" analysis was critical to "connect the dots" and was thus a prerequisite to laying the groundwork for the development of cross-sectoral findings and recommendations. This approach ensured that the final conclusions were not only rooted in the specifics of each sector, but also reflected the broader context in which these sectors operate. The resulting near-final draft was sent to TRACIT companies for their last input before launching the formal editorial process and publication.

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