

SHARED SKIES

CONVERGENCE OF WILDLIFE TRAFFICKING WITH OTHER
ILLCIT ACTIVITIES IN THE AVIATION INDUSTRY



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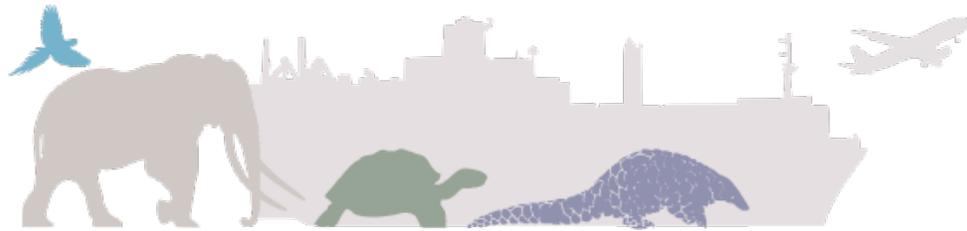


TRAFFIC
the wildlife trade monitoring network



ROUTES

Reducing Opportunities
for Unlawful Transport of
Endangered Species



The USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES) Partnership brings together transport and logistics companies, government agencies, development groups, law enforcement, conservation organizations, academia and donors to disrupt wildlife trafficking activities, and forms a key element of the concerted international response to addressing wildlife poaching and associated criminal activities worldwide.

At the heart of ROUTES is a core group of partners collaborating with the U.S. Government and the transport sector that includes Airports Council International (ACI), the Center for Advanced Defense Studies (C4ADS), the International Air Transport Association (IATA), TRAFFIC and World Wildlife Fund (WWF).

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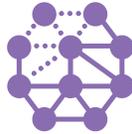
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Executive Summary

Wildlife trafficking, like other illicit activities, exploits vulnerabilities in systems of communication, finance, and transportation—including the aviation sector. These points of weakness can be co-opted by numerous trafficking operations (wildlife, drugs, weapons etc.) alike, creating illicit convergence at the level of a shipment, organization, route, hub, and jurisdiction. Understanding trends in illicit convergence can help identify fundamental vulnerabilities in the aviation industry, which, if addressed, can substantially diminish the ability of criminals to exploit this infrastructure.



Shipment-Level
Convergence



Organization-Level
Convergence



Route-Level
Convergence



Hub-Level
Convergence



Jurisdiction-Level
Convergence

By analyzing data in the C4ADS Air Seizure and World Customs Organization Customs Enforcement Network (WCO CEN) Databases, this brief offers examples of data-backed linkages between wildlife trafficking and other illicit activities and introduces a framework of five levels of convergence in which trafficking activities can occur. The findings should not be considered a comprehensive mapping of illicit convergence but do highlight instances of convergence at the shipment, route, hub, and jurisdiction levels. Notably, two-thirds of cities that reported significant wildlife trafficking activity were also linked to other (non-wildlife) trafficking instances, and approximately half of jurisdictions exploited by other trafficking also appeared in wildlife seizure data.

By leveraging data on illicit convergence, customs, national and international police, counter-trafficking agencies, wildlife conservation authorities, inter-governmental bodies, civil society institutions, private-sector wildlife task forces, and other stakeholders can demonstrate the wide-ranging impact of counter-wildlife trafficking initiatives, guide mitigation activities, and ultimately reduce criminal activity in the air transport sector.

Impacts from measures to counter wildlife trafficking and other convergent illicit activity can be amplified by 1) improving global collection, reporting, and accessibility of seizure data, 2) increasing collaboration in understanding and addressing convergence, and 3) refining mitigation activities to secure the aviation industry. This brief offers the following recommendations for consideration:

I. IMPROVE GLOBAL COLLECTION, REPORTING, AND ACCESSIBILITY OF SEIZURE DATA:

- Customs and other law enforcement authorities should increase public reporting on seizures, including seizure location, flight route, transport method, a description of the seized products, and links to specific criminal organizations.
- Customs, law enforcement agencies, wildlife conservation authorities, and civil society institutions that maintain data on illicit activities should structure and integrate this data into a centralized, accessible, secure database that covers all types of illicit activity.

2. INCREASE COLLABORATION IN UNDERSTANDING AND ADDRESSING CONVERGENCE:

- Aviation and enforcement stakeholders should recognize the need to include wildlife trafficking as part of a holistic, transnational approach to combatting organized criminal activities exploiting the aviation industry.
- Law enforcement should convene meetings with private sector stakeholders (such as airlines, airports, freight forwarders, and couriers) to identify convergent criminal activities—for example, through route-level convergence data, trafficking methods and identified criminal actors—and discuss collaborative responses.
- Customs, police, counter-trafficking agencies, and inter-governmental bodies should formalize collaboration on criminal convergence through forums such as task forces, inter-governmental consortiums, data-sharing agreements, and memorandums of understanding.

3. REFINE MITIGATION ACTIVITIES TO SECURE THE AVIATION INDUSTRY:

- Customs, law enforcement agencies, wildlife conservation authorities, and private-sector stakeholders (such as airlines, airports, freight forwarders, and couriers) should incorporate convergence analysis into the budgets and programming of relevant policies, practices, and incentives.
- Law enforcement agencies should conduct joint investigations into convergent trafficking operations, collaborating with government, civil society, and private-sector stakeholders across all relevant illicit activities.
- Customs, law enforcement agencies, wildlife conservation authorities, and civil society institutions should collaborate with transport industry stakeholders to conduct vulnerability assessments of critical transportation infrastructures to identify any conditions that are facilitating illicit activity.
- Aviation stakeholders should publicly adopt a zero-tolerance policy against all illicit activities and expand existing human resources and operation policies addressing illicit or criminal activity to encompass wildlife trafficking.
- Law enforcement authorities, private-sector stakeholders, and intergovernmental bodies should prioritize the development of automated detection and other emerging technologies that can screen for multiple types of illicit goods.
- Government and civil society stakeholders should engage actors outside of the aviation industry (e.g. land and maritime transport, as well as systems of communication and finance) to ensure that relevant investigative findings, analytical insights, and effective mitigation policies and practices are shared across all relevant legal systems.
- Acknowledging that approaches to and coverage of seizures currently focus on one commodity, government and counter-trafficking agencies should ensure that existing programs and resource allocations address transnational crimes as linked and convergent threats, irrespective of commodity.

Introduction

The convergence between wildlife trafficking and other illicit activities is not a new phenomenon. In a 2017 report, the United Nations (UN) Office on Drugs and Crime concluded that wildlife trafficking “takes advantage of vulnerabilities in the legal supply chain...and frequently converges with other forms of serious criminality.”¹ Similar findings have been affirmed by the UN General Assembly,² the Financial Action Task Force,³ INTERPOL,⁴ scholars of organized crime,⁵ and civil society.⁶ Criminals’ reliance on air routes to traffic wildlife exposes the air industry and the public to reputational damage,⁷ health risks,⁸ and security threats.⁹ As with other illicit activities, wildlife trafficking exploits legal infrastructure.¹⁰ This brief explores the drivers, evidence, and implications of instances in which both wildlife trafficking and other illicit activities converge in licit systems.

Traffickers rely on legal systems of communication, finance, and transportation to coordinate, fulfill, and process payments from illicit shipments, regardless of the product.¹¹ Illicit networks are dynamic and opportunistic, shifting their structure or operations to maximize profit and minimize risk.¹² For example, a study of weapons trafficking along air routes concluded that criminals relied on “relaxed oversight and free trade zones for transit, product warehousing, and laundering of proceeds.”¹³ Infrastructure supporting the transport and warehousing of weapons could also facilitate, for example, drug or wildlife trafficking.

The opportunistic exploitation of aviation infrastructure has given rise to illicit convergence, a concept this brief defines as the coincidence of multiple types of trafficking activities.¹⁴ ¹⁵ Illicit convergence can occur at several different levels: shipment, organization, route, hub, and jurisdiction (see **Typologies of Convergence**, right).

These types of convergence each exploit a unique set of vulnerabilities. Understanding which types of convergence are present (and which are not) at a specific place and time can offer insight into the vulnerabilities present in legal systems.

Because illicit networks exploit licit systems—which are controlled by governments, international organizations, and private entities—these networks are vulnerable to discovery, interdiction, and disruption. By understanding how illicit supply chains exploit the same licit systems, law enforcement and industry stakeholders can better enforce counter-trafficking laws and regulations, securing these systems from illicit actors.

Trafficking in the aviation industry constitutes a microcosm of broader criminal convergence, since air transport is highly concentrated and screening for security threats of both air cargo and passengers is required by international regulation.²² In 2018, the International Air Transport Association (IATA) recorded approximately 22,000²³ unique city-pairs routes worldwide.²⁴ This means that there are fewer direct routes from one location to another, compared to maritime or land transport,²⁵ creating transport bottlenecks that can be targeted for enforcement.²⁶

The concentration and regulation of the aviation industry means that strategic interventions at a few key hubs and routes could disrupt illicit activity across the entire air transport system. However, such interventions require an understanding of the products being trafficked, the techniques used for illicit transport, the paths of supply chains, and—crucially—patterns of convergence. As such, this document discusses the concepts, indicators, and implications of each type of convergence, in the hopes that enforcement, aviation, and wildlife conservation stakeholders will apply this approach to their own data and workflows. In this way, stakeholders will be able to identify opportunities for crime-agnostic interventions that can impact entire trafficking systems, rather than a single operation or network.

Typologies of Convergence

SHIPMENT CONVERGENCE

two or more types of illicit products moved simultaneously by the same passenger or in the same container (e.g. a checked piece of baggage that contains both turtles and gold bars¹⁶).

ORGANIZATION CONVERGENCE

one network of illicit actors involved in the trafficking of two or more types of illicit products (e.g. a network that is linked to trafficking of rhino horn and gold¹⁷)

ROUTE CONVERGENCE

a specific pathway along which two or more types of illicit products are trafficked, regardless of direction (e.g. a flight path that is implicated in supply chains for both narcotics¹⁸ and giraffe trafficking¹⁹)

HUB CONVERGENCE

a specific point, such as a city or airport, through which two or more types of illicit products are trafficked (e.g. an airport at which authorities seize both lion skin and counterfeit antique coins²⁰)

JURISDICTION CONVERGENCE

a political or regulatory region in which traffickers smuggle two or more types of illicit products (e.g. a country’s licit infrastructure that is exploited for both narcotics and totoaba fish swim bladder trafficking²¹)

Methodology

Analysis for this brief is rooted in two datasets: the C4ADS Air Seizure Database and the World Customs Organization Customs Enforcement Network (WCO CEN) Database. The C4ADS Air Seizure Database is used to identify all publicly reported instances of wildlife trafficking in air transport (which can be underreported in enforcement data). The WCO CEN Database provides a dataset of seizures of other illicit products, including drugs, weapons, counterfeits, currency, tobacco, alcohol, and cultural heritage products; this dataset was narrowed to trafficking instances explicitly linked to air transport. Because of significant differences in reporting rates between jurisdictions, this study applies a binary framework for most analyses—that is, convergence is defined by the coincidence of both wildlife and other, non-wildlife, trafficking instances within the relevant timeframe. Measuring the scale of convergence (using metrics such as the number of convergent trafficking instances) is outside the scope of this study.

This brief places a premium on a global scope and so seeks to limit media biases (such as the inclination to report on crimes of public interest, such as seizures of weapons or drugs, in a particular jurisdiction) through the use of customs data. To increase granularity and completeness of the analysis, this data is supplemented with public sources (e.g. local reporting, social media) and other forms of region-specific data.

Note that the use of publicly available information and self-reported enforcement data in this analysis entails certain limitations and biases. For publicly available information, the most notable biases are 1) skewed trends due to higher detection rates for air passengers and shipments entering a country than exiting, and 2) reporting biases influenced by stakeholder interests. The latter is particularly complex, since its effect on reporting can vary by jurisdiction and time. For example, internal or international politics may discourage a customs agency from publicizing seizures; conversely, budget advocacy may incentivize the agency to build a media presence by fixating on large-scale seizures. An in-depth discussion of the various issues surrounding the use of seizure data can be found in the ROUTES report *Flying Under the Radar*.²⁷

Shipment-Level Convergence

Shipment-level convergence occurs when two or more types of illicit product are transported together (i.e. by the same passenger or in the same cargo consignment, mail package, or baggage piece). This is the most straightforward type of convergence and the most commonly accepted definition of the term. Illicit products may be shipped together if the products share the same suppliers or consumers (or if these populations are co-located) or are trafficked by the same network. In other cases, one or more of the illicit products may belong to the trafficker, such as undeclared currency transported alongside drugs.²⁸ While rare, several instances of shipment-level convergence do appear in the C4ADS Air Seizure Database.²⁹ These include raw gold and mammals seized in Suriname,³⁰ and diamonds, wildlife, and prescription medication seized in South Africa.³¹

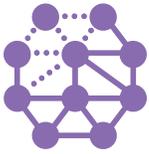
Shipment-level convergence is often explicitly stated in seizure reporting. However, differences in perception of severity can affect what information is reported. For example, counterfeit cigarettes may be confiscated without remark if found amidst a large shipment of weapons. Additionally, certain databases do not collect information on products outside their scope of analysis. For example, a drug seizure database may not record wildlife seized alongside narcotics, even if the convergence is named in the report. Data sharing and collaboration among database curators will maximize visibility into shipment-level convergence.

CASE STUDY: TURTLES AND GOLD

In April of 2019, customs officials in Dhaka, Bangladesh, seized 80 turtles and 12 gold bars from a passenger arriving from Thailand.³² The seizure, a joint operation between the Customs Intelligence and Investigation Directorate and Dhaka Customs House, resulted in the arrest of two individuals.³³ The gold bars weighed approximately 3 kilograms and were valued at over 170,000 USD.³⁴ Because convergent shipments involve multiple types of illicit activity, they may be easier to detect—provided that relevant activities are encompassed in screening programs such as risk algorithms, scanning technology, or manual inspections of passengers and cargo.

Star tortoises, a reptile commonly trafficked along air routes. Note that this photograph is not related to the above seizure at Hazrat Shahjalal International Airport.
Chaiwat Subprasom / REUTERS.





Organization-Level Convergence

Organization-level convergence occurs when the same illicit network moves multiple types of illicit product. This type of convergence can occur when two or more illicit products have overlapping supply chains or when market forces of supply and demand prompt a network to diversify. The distinguishing feature is the presence of trafficking infrastructure. If a criminal syndicate is actively exploiting systems of transportation, communication, and finance to move one illicit product, it could logically apply the same trafficking infrastructure to conduct other illicit activities. An example of such multitasking is cartels in Mexico trafficking in both cocaine and totoaba fish swim bladders.³⁵

From a seizure data perspective, organization-level convergence is the most difficult to identify. Seizure reporting rarely names trafficking syndicates, especially those with ongoing operations. Even after a syndicate has been dismantled reporting tends only to provide anecdotes of linked seizures. Thus, evidence of convergence around a specific illicit network is typically either founded in qualitative research or forensic evidence. In some cases, organizational convergence can be inferred through commonalities in seized shipments, such as repeated seizures of similar products exploiting the same flight route or method of obfuscation.³⁶

Mitigating organization-level convergence involves disrupting the resources and operations of a specific illicit network. In the short term, customs can begin to tighten loopholes by incorporating high risk routes into risk algorithms, conducting investigations into individuals arrested with illicit products, and sharing this data with private-sector stakeholders and counter-trafficking NGOs. More tailored interventions include targeting the common *modi operandi*, such as preferred obfuscation methods or modes of transport. At its core, organization-level convergence highlights vulnerabilities in our “social infrastructure” (i.e. the presence of criminal actors in society). Such vulnerabilities can be redressed by removing these individuals from legal systems, through law enforcement or private-sector interventions.³⁷ In the long term, decreasing the profitability of trafficking to prompt would-be criminals to pursue legal activities offers the most sustainable solution.³⁸

CASE STUDY: HANDMADE VESTS AND IVORY

Because suspected links to criminal organizations are not included in customs seizure reporting to WCO CEN, nor consistently captured in public reporting, organization-level convergence between wildlife and other trafficking activities could not be identified. However, the Kromah syndicate offers an example of such convergence, albeit evidenced by qualitative reporting.³⁹ The US Department of Justice indictment of several members of the Uganda-based criminal syndicate (including Moazu Kromah himself) states that the network trafficked ivory, rhino horn, and heroin to buyers in New York.⁴⁰

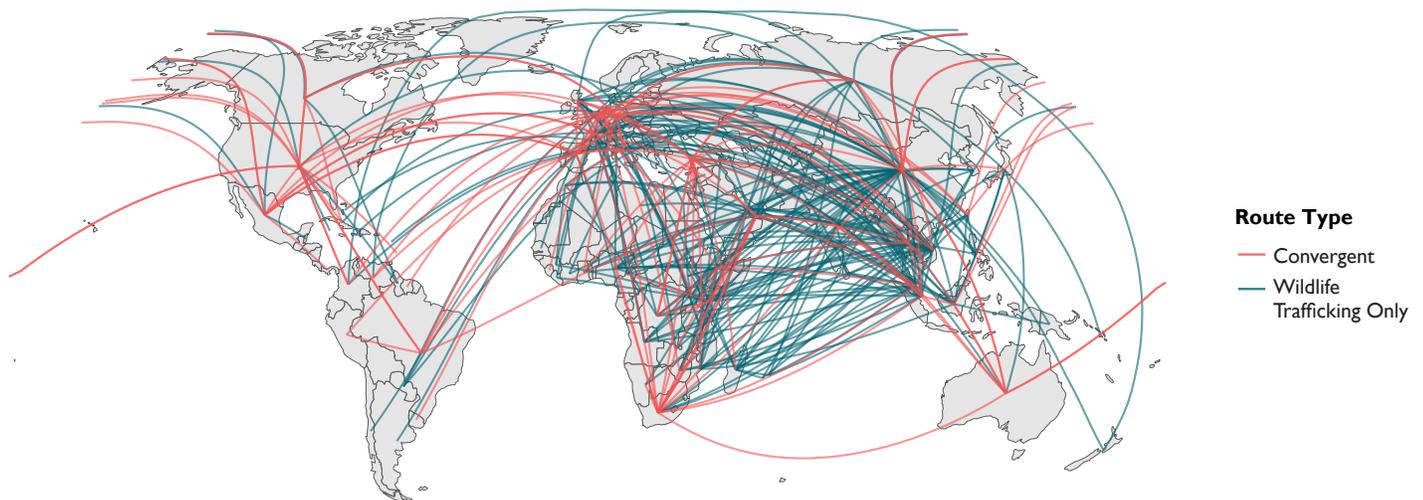
From a data perspective, the case of ivory trafficked through Hong Kong in handmade vests⁴¹ illustrates how seizure databases can be used to infer possible organized criminal trafficking operations. Between 2015 and 2017, over a dozen seized shipments of ivory—which overwhelmingly originated in Harare and were destined for China—all included ivory hidden in tailor-made vests.⁴² An investigation by Hong Kong authorities resulted in multiple arrests, and no trafficking instances matching this *modus operandi* appear in the C4ADS Air Seizure Database after 2017.⁴³ Although organization-level convergence was never explicitly confirmed, the granularity of seizure data (which included information on the product, flight route, obfuscation method) made it possible to identify and track this case using publicly available information. For more information on this network, see the “Handmade Vest” case studies in *Flying Under the Radar* and *In Plane Sight*.⁴⁴

Route-Level Convergence

Route-level convergence occurs when illicit actors exploit legal infrastructure along the same path between two points. This type of convergence may be driven by price⁴⁵ (e.g. a flight route that is the most cost-effective path between two airports), but the defining feature is vulnerabilities that extend along the entire pathway between the points. In the aviation industry, this “pathway” typically includes the origin, transit, and destination airports, as well as the aircraft or carrier. Examples of vulnerabilities include weak enforcement capacity and insider threats that span the entire route.⁴⁶

Looking at the data, route-level convergence is seen where a specific flight route (origin, transit, and destination, based on available data) is reported in multiple types of trafficking instances within a given time period. Again, granularity of data is important: in addition to detailed route information, the carrier or flight number exploited by a trafficking instance can provide more insight into the route’s vulnerabilities. Due to data limitations, this study analyzes convergence around flight routes between jurisdictions rather than airports (for example, between Spain and Germany). While this level of analysis does not distinguish between separate hubs within the same jurisdictions,⁴⁷ it does offer a model for evaluating convergence at the route level.

Convergence of jurisdiction-level routes reported in wildlife and non-wildlife trafficking instances between 2015 and 2019 (Source: C4ADS Air Seizure and WCO CEN Databases⁴⁷).



Between 2015 and 2019, approximately 37% of trafficking routes reported in known wildlife trafficking instances were also used to traffic other (non-wildlife) illicit products.^{49, 50} As discussed previously, this is a binary metric and does not constitute an exhaustive list of convergent routes. However, the aviation pathways depicted above in red are being exploited to move multiple types of illicit product, suggesting vulnerabilities in these flight routes. After identifying convergent routes, stakeholders should determine specific risks by evaluating each component of the transport system that supports the route (customs mandate, scanning technology, warehouse security, passenger awareness of regulations, etc.). TRAFFIC’s CAFTA regional gap analysis is an example of a framework that could be adapted and applied to such a vulnerability assessment.⁵¹

In every instance of route convergence, an initial response to compile and share data with relevant organizations along the entire flight path is critical. Ensuring that enforcement agencies and private-sector actors can account for the convergence in their risk algorithms will allow for informed decisions on resource allocation and minimize duplicative efforts. For particularly high-priority routes, a task force may offer a structured forum for such collaboration. Following the sharing of data, targeted technology or personnel interventions (e.g. increasing security staff or removing an insider threat) may be warranted. Such mitigation measures may initially result in increased seizure rates, as existing trafficking flows are more effectively interdicted.

CASE STUDY: MALAYSIA-HONG KONG FLIGHT ROUTE CONVERGENCE

In every year between 2015 and 2019, flight routes between Malaysia and Hong Kong have been exploited to move both illicit wildlife and drug products.⁵² Wildlife seizures included attempted imports of carved ivory, helmeted hornbill casques,⁵³ tiger and pangolin products, turtles, tortoises, and lizards.⁵⁴ Drug seizures included shipments of heroin, methamphetamines, ketamine, and ecstasy.⁵⁵ Approximately 90% of known illicit shipments along Hong Kong-Malaysia⁵⁶ flight routes were seized on arrival (regardless of direction), suggesting that vulnerabilities may be concentrated in departure infrastructure.^{57,58}

Notably, the air transport of illicit drugs and wildlife between Malaysia and Hong Kong both leveraged similar methods of obfuscation: packing illicit products amongst foodstuffs and mis-declaring illicit shipments as auto parts. In November of 2015, Hong Kong officials seized 38.6 kg of ivory in a shipment of pet food;⁵⁹ in April of 2019, Hong Kong customs seized over 4 kg of heroin and cannabis from an inbound shipment of coffee.⁶⁰ Auto parts were used to obfuscate two record-setting 2019 seizures: 120 kg of ketamine in January⁶¹ and 82.5 kg of rhino horn in July.⁶² Ensuring that seizure data captures such *modi operandi* will allow authorities to further refine risk algorithms.

Top: 82.5 kg of rhino horn seized from a 2019 shipment mis-declared as “auto parts” (Source: Hong Kong Customs⁶³).



Bottom: 120 kg of ketamine seized from a 2019 shipment mis-declared as “motor spare parts” (Source: Hong Kong Customs⁶⁴).





Hub-Level Convergence

Hub-level convergence occurs when illicit actors exploit infrastructure in or around a specific fixed point. This fixed point may be a geographic location, such as a city or airport, or an abstract one, such as a social media page or a correspondent bank. Hub-level convergence may be driven by co-location of source materials or end consumers (e.g. opioids precursor chemicals and ivory in the Chinese city of Shijiazhuang⁶⁵). However, as with route-level convergence, the defining feature is a vulnerability in the hub's infrastructure, such as limited enforcement capacity (e.g. "overwhelmed" customs agencies at African airports⁶⁶) or an insider threat (airport employees enabling the smuggling of drugs, weapons, and explosives⁶⁷). Without such vulnerabilities, a hub would not be as viable for illicit activity.⁶⁸

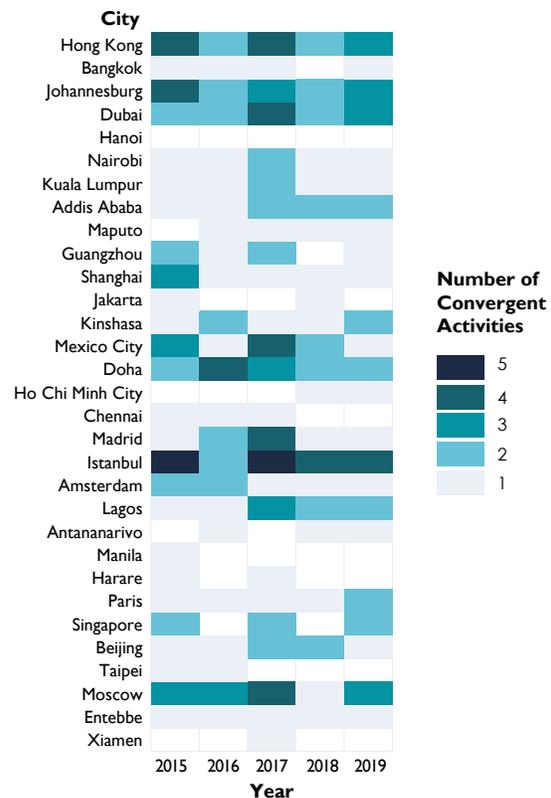
For the purposes of this analysis, hub-level convergence occurs when two or more types of trafficking implicate the same city in a given timeframe.⁶⁹ As the definition of convergence narrows (say, from jurisdiction to hub), the granularity of the data becomes increasingly important. For example, to fully assess airport hub-level convergence, a seizure database ideally would include not only the seizure airport, but also the origin, transit, and destination airports. Due to data limitations, this study analyzes hub-level convergence at the city, rather than airport, level.

Of the 55 cities with five or more known wildlife trafficking instances, approximately two-thirds also reported other (non-wildlife) trafficking instances in a given year, and almost half reported such convergence in four or more years between 2015 and 2019.⁷¹ While wildlife seizures does not necessarily indicate the presence of other trafficking, this data suggests that the presence of wildlife trafficking instances increases the likelihood that hubs are also being exploited to traffic other products. Due to biases in the data (reference "Methodology" on page 7), this analysis should not be considered an exhaustive list of hub-level convergence; stakeholders should apply such an analysis across relevant datasets to identify vulnerable points in legal systems.

If convergent hubs are found in the data, stakeholders should conduct a rigorous assessment, similar to that of route-level convergence, to identify the vulnerabilities that are being exploited to move the illicit products. Mitigations depend on the diagnosis but may include capacity building (such as funding or training), technology (such as scanners), collaboration (such as data-sharing protocols), or the removal of an insider threat. Such interventions may precipitate an immediate drop in trafficking instances, as was the case when a ground handler at an Indonesian airport was arrested in connection to a prolific pig-nosed turtle smuggling operation.⁷² In other instances, a decline in trafficking instances may take time or even be preceded by an increase of seizures (as more effective enforcement measures may boost interdiction rates independent of actual trafficking volumes).

Hub-level convergence of illicit activities at top wildlife trafficking air hubs by year, 2015-2019 (Source: C4ADS Air Seizure and WCO CEN Databases⁷⁰).

Top cities found in C4ADS Air Seizure Database, by number of trafficking instances between 2015 and 2019



Number of convergent activities refers to the count of illicit product types (e.g. drugs, wildlife, weapons, tobacco, etc.) that appear in the trafficking instances of a specific city in a given year.

Hanoi is the fifth most frequent city in the C4ADS Air Seizure Database, by number of trafficking instances. However, there are no Hanoi non-wildlife trafficking instances in WCO CEN Database between 2015 and 2019.

CASE STUDY: CONVERGENCE IN JOHANNESBURG

Johannesburg, South Africa, is a hub for the trafficking of both wildlife and other, non-wildlife, products. Rhino horn, methamphetamines, ivory, and cocaine were the most commonly seized contraband between 2015 and 2019, although the data also included seizures of abalone, cannabis, heroin, khat leaves, lion bones, 3,4-methylenedioxymethamphetamine (MDMA), and pangolin scales. Additionally, the data contained intermittent seizures of products violating intellectual property rights (IPR) and revenue laws (specifically, counterfeit medications, gold bars, and undeclared cigarettes).⁷³

Between 2015 and 2019, known Johannesburg wildlife and other illicit good trafficking most frequently exploited passenger baggage (60% and 36% of trafficking instances, respectively) and air freight (20% and 31%, respectively).⁷⁴ Some modes of transport were favored by a particular illicit activity. For example, approximately 16% of known Johannesburg drug trafficking instances consisted of mail shipments, a much higher proportion compared with other illicit activities.⁷⁶ In other cases, the rates were similar across activities—wildlife and drug products were seized from passenger clothing or items in 10% and 13% of trafficking instances, respectively.⁷⁷ Shipments of illicit wildlife or wildlife products were frequently obfuscated in foodstuffs (such as wine, coffee beans, and chocolate) or aluminum foil.⁷⁸ While the WCO CEN Database does not report specific commodities used to conceal illicit goods, it does list eight drug shipments seized among foodstuffs.⁷⁹

Cocaine (left) and rhino horn (right) seizures from passenger baggage in Johannesburg, both destined for Hong Kong (Source: Left – IOL⁸⁰, Right – News24⁸¹).

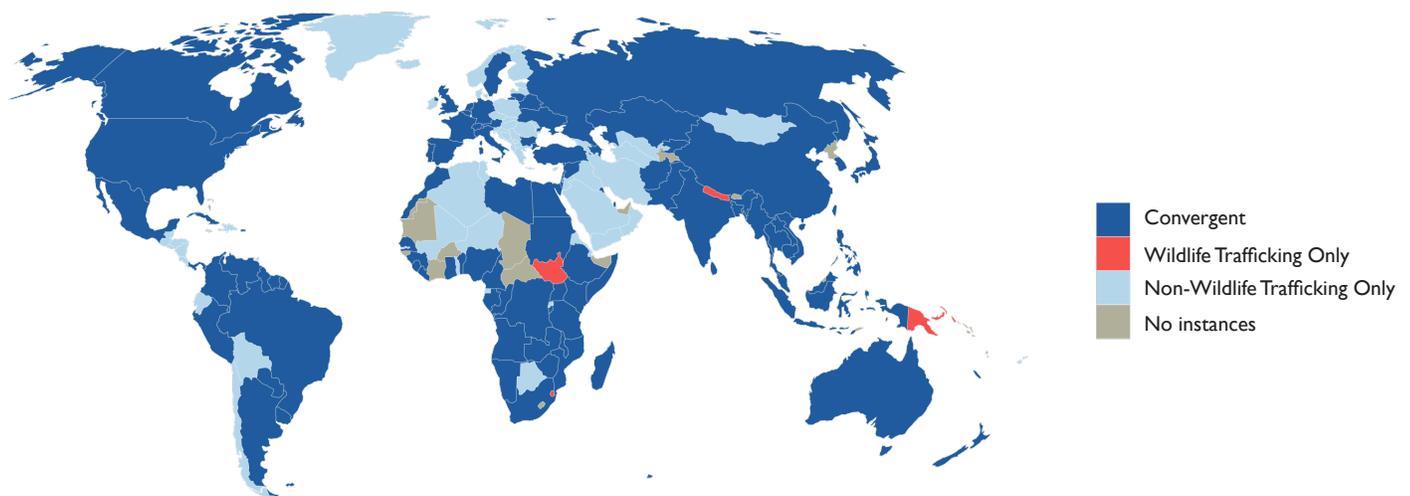




Jurisdiction-Level Convergence

At the broadest level of convergence, illicit actors exploit autonomous or semi-autonomous spaces of governance (as opposed to a fixed point, as is the case with hub-level convergence). Jurisdiction-level convergence may be driven by the presence of raw materials or end markets for multiple illicit products (e.g. precursor chemicals and pangolin consumers in China⁸²), a lack of enforcement capacity (e.g. the intersection of weapons trafficking and the human slave trade in Libya⁸³), regulatory blind spots around crucial services (e.g. lax due diligence and minimal corporate transparency in the US state of Delaware⁸⁴), or a jurisdiction's function as a focal point in a legal system (e.g. the smuggling of a variety of contraband through transport hubs in the UAE⁸⁵). In some cases, governing authorities tacitly monetize their sovereignty by enabling such activities (e.g. revenue generated from “flags of convenience” in St. Lucia⁸⁶) or even take an active role in the crime (e.g. North Korean embassy staff exploiting international norms for diplomats to traffic various illicit products⁸⁷).

Jurisdiction-level convergence of wildlife trafficking and other illicit activities in air transport, 2015-2019 (Source: C4ADS Air Seizure and WCO CEN Databases⁸⁸).



Of the 176 countries in the WCO CEN Database between 2015 and 2019, 96 reported seizures of both wildlife and other, non-wildlife, products along air routes.⁸⁹ Of course, the mere presence of multiple types of illicit activity in a jurisdiction does not necessarily indicate significant exploitation of its legal systems—crime occurs in virtually every jurisdiction, and such binary metrics sometimes offer more insight into reporting than illicit exploitation.⁹⁰ When narrowed to the top ten jurisdictions (by count of wildlife and non-wildlife trafficking instances in the C4ADS Air Seizure and WCO CEN Databases, respectively), four jurisdictions appear on both top-ten lists: China, Hong Kong, Mexico, and South Africa.⁹¹ These findings are corroborated by previous studies into specific types of crime, including wildlife,⁹² drug,⁹³ counterfeit,⁹⁴ and gold⁹⁵ trafficking. Due to biases in the data (reference “Methodology” on page 7), this analysis should not be considered an exhaustive list of jurisdiction-level convergence. Rather, it serves to demonstrate how stakeholders can leverage available data to identify jurisdictions whose legal aviation infrastructure is being exploited by multiple types of illicit activity.

Convergence at the jurisdiction level is the broadest and often the most difficult to disrupt, especially for aviation stakeholders. Some of the drivers discussed above are highly difficult to mitigate.⁹⁶ The complexity of systems such as governance, enforcement, and transport—as well as the sovereignty or semi-sovereignty of the jurisdictions—can mean that mitigation typically requires longer-term, more incremental solutions such as advocacy, diplomacy, and collaboration. Depending on the drivers of convergence, specific interventions may include demand-reduction campaigns, regulatory overhaul, and enforcement capacity building. In the short term, jurisdictions and stakeholders can leverage available seizure data to develop or refine risk algorithms, inform policies, guide training, and identify vulnerabilities.

CASE STUDY: TORTOISE AND HEROIN TRAFFICKING IN MADAGASCAR

Illicit actors have exploited Madagascar's legal aviation infrastructure to traffic both tortoises and drugs.⁹⁷ In a 2018 report, the Financial Action Task Force (FATF) classified Madagascar as a transit hub for heroin originating from the Middle East,⁹⁸ and the C4ADS Air Seizure Database contains over a dozen known instances of tortoise trafficking involving the country, instances which collectively account for over 3,500 specimens.⁹⁹ For both products, traffickers exploit weaknesses at Ivato Airport as well as smaller hubs such as Nosy Be.¹⁰⁰ Discussing the convergence of tortoise and drug trafficking in Madagascar,¹⁰¹ researchers from one study concluded that "the confluence of illicit flows is not coincidental. The erosion of governance and oversight associated with one illegal trade facilitates others."¹⁰²

Ploughshare and radiated tortoises found in the checked luggage of a passenger arriving to Mumbai from Madagascar in May of 2017.
(Source: BBC¹⁰⁵)



Conclusion

Wildlife trafficking along air routes exploits the same vulnerabilities in the aviation industry as other forms of illicit activity, such as the trafficking of drugs, counterfeits, weapons, and other commodities. These similarities mean that wildlife trafficking can and does converge with other illicit activities at the level of shipment, organization, route, hub, and jurisdiction. Each level of convergence is caused by a unique set of circumstances and offers distinct insights into vulnerabilities exploited in the legal aviation infrastructure.

Over half of identified jurisdictions exploited by non-wildlife trafficking operations also appeared in wildlife seizure data, and two-thirds of cities with significant wildlife trafficking activity were linked to other types of trafficking. Additionally, over one-third of country-pair routes that served as pathways for illicit wildlife shipments were also linked to other types of trafficking. By leveraging seizure data to evaluate convergence—particularly at the hub and route levels—the need for vulnerability assessments by the private sector and enforcement agencies can be identified. Law enforcement and risk managers can also use this data to grow the attention and resources available for counter-wildlife trafficking, as insights can demonstrate the connection between wildlife trafficking and other illicit activities.

Moving forward, stakeholders (including members of the aviation, wildlife conservation, enforcement, and regulatory communities) should seek to improve the curation, distribution, and integration of convergence data and analysis. Thorough public reporting of seizure data can lessen the burden on enforcement authorities by allowing non-enforcement stakeholders to contribute expertise and resources to analysis, improving the accuracy of findings. Regular engagement among stakeholders can increase collective visibility and reduce duplicative efforts. Finally, applying insights on convergence and the accompanying vulnerabilities to mitigation activities can increase the impact of these interventions by targeting the underlying conditions of illicit activity. Securing the aviation industry from criminal activity is paramount to stable, profitable business operations; by understanding and remediating the drivers of illicit convergence within the industry, the aviation sector will more efficiently combat transnational crime.

This brief offers the following recommendations for consideration:

I. IMPROVE GLOBAL COLLECTION, REPORTING, AND ACCESSIBILITY OF SEIZURE DATA:

- Customs and other law enforcement authorities should increase public reporting on seizures, including seizure location, flight route, transport method, a description of the seized products, and (where possible) links to specific criminal organizations. A guide and recommendations for customs, enforcement agencies, and the private-sector to more effectively communicate wildlife seizures can be found on the ROUTES website.¹⁰⁴
- Customs, law enforcement agencies, wildlife conservation authorities, and civil society institutions that maintain data on illicit activities should structure and integrate this data into a centralized, accessible, secure database that covers all types of illicit activity, thus enabling analysis on convergence.

2. INCREASE COLLABORATION IN UNDERSTANDING AND ADDRESSING CONVERGENCE:

- Aviation and enforcement stakeholders should recognize the need to include wildlife trafficking as part of a holistic, transnational approach to combatting organized criminal activities exploiting the aviation industry.
- Law enforcement should convene meetings with private sector stakeholders (such as airlines, airports, freight forwarders, and couriers) to identify convergent criminal activities—for example, through route-level convergence data, trafficking methods and identified criminal actors—and discuss collaborative responses.
- Law enforcement authorities should collaborate with private-sector organizations to raise industry awareness and encourage reporting of illicit trafficking activities beyond wildlife trafficking to reduce insider threats, improve sector risk management, and strengthen enforcement responses.
- Customs, police, counter-trafficking agencies, and inter-governmental bodies should formalize collaboration on criminal convergence through forums such as task forces, inter-governmental consortiums, data-sharing agreements, and memorandums of understanding.

3. REFINE MITIGATION ACTIVITIES TO SECURE THE AVIATION INDUSTRY:

- Customs, law enforcement agencies, wildlife conservation authorities, and aviation stakeholders (such as airlines, airports, freight forwarders, and couriers) should incorporate convergence analysis into the budgets and programming of relevant policies and practices.
- Aviation stakeholders should ensure that relevant employees are aware of the different levels of convergence and trained in the detection of all types of illicit activity.
- Law enforcement agencies should conduct joint investigations into convergent trafficking operations, collaborating with government, civil society, and private-sector stakeholders across all relevant illicit activities.
- Customs, police, counter-trafficking agencies, wildlife conservation authorities, and civil society institutions should collaborate with transport industry stakeholders to conduct vulnerability assessments of critical transportation infrastructures to identify any conditions that are facilitating illicit activity.
- Private-sector stakeholders (airlines, airports, freight forwarders, couriers, etc.) should publicly recognize that mitigating wildlife trafficking and convergence can help reduce other criminal activity and adopt a zero-tolerance policy against all illicit activities.
- Aviation stakeholders should expand existing human resources and operation policies addressing illicit or criminal activity to encompass wildlife trafficking.
- All stakeholders should ensure that protocols and incentives for mitigation, interdiction, and reporting comprehensively cover all types of illicit activities and are not siloed by trafficking type.
- Law enforcement authorities, private-sector stakeholders, and intergovernmental bodies should prioritize the development of automated detection and other emerging technologies that can screen for multiple types of illicit goods.
- Government and civil society stakeholders should engage actors outside of the aviation industry (e.g. land and maritime transport, as well as systems of communication and finance) to ensure that investigative findings, analytical insights, and effective mitigation policies and practices are shared across all relevant legal systems.
- Acknowledging that approaches to and coverage of seizures currently focus on one commodity, government and counter-trafficking agencies should ensure that existing programs and resource allocations address transnational crimes as linked and convergent threats, irrespective of commodity.

Appendix I

Top 10 Jurisdictions in C4ADS Air Seizure Database and WCO CEN Database

Source: C4ADS Air Seizure Database (2015-2019); WCO Customs Enforcement Network Database (2015-2019)

C4ADS Air Seizure Database	WCO CEN Database
China	Hong Kong
Hong Kong	USA
Indonesia	Germany
Thailand	Turkey
Vietnam	Mexico
South Africa	South Africa
UAE	Saudi Arabia
Mexico	China
India	Italy
Malaysia	Spain

Each column constitutes the top 10 jurisdictions (by count of trafficking instances) in the C4ADS Air Seizure and WCO CEN Databases. The left list was generated based on wildlife trafficking instances, and the right list was generated based on other (non-wildlife) trafficking instances. Jurisdictions in red appear on both top 10 lists.

Notes

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- 14 This study uses the framework of trafficking activities put forth by the WCO—environmental, security, drugs, revenue, intellectual property rights (IPR) and health and safety, and cultural heritage items—but narrows "environmental trafficking" to the trafficking of illicit wildlife and wildlife products only (Source: "Illicit Trade Report 2019." World Customs Organization, 30 Jul. 2020, http://www.wcoomd.org/-/media/wco/public/global/pdf/topics/enforcement-and-compliance/activities-and-programmes/illicit-trade-report/itr_2019_en.pdf?db=web).
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- 38 “World Wildlife Crime Report: Trafficking in Protected Species.” United Nations Office of Drugs and Crime, 2020, https://www.unodc.org/documents/data-and-analysis/wildlife/2020/World_Wildlife_Report_2020_9July.pdf.
- 39 “Members Of African Criminal Enterprise Charged With Large-Scale Trafficking Of Rhinoceros Horns And Elephant Ivory And Heroin Distribution.” The United States Department of Justice, 13 Jun. 2019, www.justice.gov/usao-sdny/pr/members-african-criminal-enterprise-charged-large-scale-trafficking-rhinoceros-horns.
- 40 “Members Of African Criminal Enterprise Charged With Large-Scale Trafficking Of Rhinoceros Horns And Elephant Ivory And Heroin Distribution.” The United States Department of Justice, 13 Jun. 2019, www.justice.gov/usao-sdny/pr/members-african-criminal-enterprise-charged-large-scale-trafficking-rhinoceros-horns.
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- 43 USAID Routes Partnership. C4ADS Air Seizure Database, C4ADS, Nov. 2020.
- 44 Utermohlen, M. & Baine, P. “Flying Under the Radar.” C4ADS and USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES), May 2017, www.c4ads.org/s/Flying-Under-the-Radar-59tc.pdf; Utermohlen, M. & Baine, P. “In Plane Sight.” C4ADS and USAID Reducing Opportunities for Unlawful Transport of Endangered Species (ROUTES), Aug. 2018, www.c4ads.org/s/In-Plane-Sight-d2bd.pdf.
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- 47 For example, a flight between Madrid and Frankfurt is indistinguishable from a flight between Barcelona and Munich.
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- 49 USAID Routes Partnership. C4ADS Air Seizure Database, C4ADS, Nov. 2020; Customs Enforcement Network. World Customs Organization, Mar. 2020.
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- 55 Customs Enforcement Network. World Customs Organization, Mar. 2020.
- 56 Route is bidirectional.
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- 59 “Hong Kong Customs detects suspected case of ivory smuggling (with photos).” Hong Kong Customs and Excise Department, 4 November 2015, www.customs.gov.hk/en/publication_press/press/index_id_1457.html.
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- 71 USAID Routes Partnership. C4ADS Air Seizure Database, C4ADS, Nov. 2020; Customs Enforcement Network. World Customs Organization, Mar. 2020.
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- 73 Customs Enforcement Network. World Customs Organization, Nov. 2020.
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- 75 It should be noted that these statistics only include trafficking instances that explicitly reported the mode of transport. In the C4ADS Air Seizure Database, 8% of Johannesburg trafficking instances between 2015 and 2019 do not specify transport mode. In the same timeframe, 7% of Johannesburg non-wildlife trafficking from the WCO CEN Database also lacked data on transport mode.
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