

**Montreal Protocol
on Substances that
Deplete the Ozone Layer**

Distr.: General

27 April 2026

Original: English

**Open-ended Working Group of the Parties
to the Montreal Protocol on Substances
that Deplete the Ozone Layer
Forty-eighth meeting
Bangkok, 13–17 July 2026
Item 7 of the provisional agenda***

Further strengthening Montreal Protocol institutions

**Compilation of information provided by parties on illegal trade
in controlled substances and synthesis of best practices****Note by the Secretariat****I. Introduction**

1. The present note provides an update to the document of the same title (UNEP/OzL.Pro.WG.1/47/5) prepared in accordance with paragraph 3 of decision XXXVI/9. In that decision, the Thirty-Sixth Meeting of the Parties to the Montreal Protocol on Substances that Deplete the Ozone Layer requested the Ozone Secretariat to compile information provided by parties pursuant to decision XXXV/12, on further strengthening Montreal Protocol institutions, including for combating illegal trade, and to synthesize best practices to prevent illegal trade in controlled substances, for consideration by the Thirty-Seventh Meeting of the Parties. Document UNEP/OzL.Pro.WG.1/47/5 was made available before the forty-seventh meeting of the Open-ended Working Group of the Parties to the Protocol. The present note takes into account information received from parties since 22 April 2025 and responds to the request in paragraph 2 of decision XXXV/12 for the Secretariat to provide, before the forty-sixth meeting of the Open-ended Working Group, and on an annual basis thereafter, a compilation of the information provided by parties pursuant to paragraph 1 of decision XXXV/12, as well as decision XXXIV/8.

2. In decision XXXV/12, the Thirty-Fifth Meeting of the Parties recalled decisions XIV/7, XXXI/3 and XXXIV/8 and, in paragraph 1, encouraged parties to facilitate the exchange of information on best practices to prevent illegal trade of controlled substances and to inform the Secretariat of practices used by entities attempting unauthorized imports of controlled substances that might include the mislabelling of containers of controlled substances or misreporting of controlled substances on customs declarations.

3. In preparing the present note, the Secretariat considered all cases of illegal trade reported by parties on a voluntary basis over the years in response to previous decisions on the subject, namely decisions XIV/7, XXXI/3 and XXXIV/8. In those decisions, the Meetings of the Parties emphasized the importance of improving monitoring and prevention of illegal trade in controlled substances by reporting fully proved cases to the Secretariat, sharing information on enforcement actions and known causes of illegal production, and facilitating the exchange of information among parties. In paragraph 3 of decision XXXIV/8, the Thirty-Fourth Meeting of the Parties also encouraged parties to provide additional information about illegal trade situations, to the extent that they were able to do so. The

* UNEP/OzL.Pro.WG.1/48/1.

Secretariat was requested to collect and disseminate such information to support compliance and the timely phase-out of controlled substances.

4. All 1,107¹ reports of illegal trade received by the Secretariat as at the date of the present note have been made available in the online database of illegal trade cases.² Of the parties that informed the Secretariat that they had no cases of illegal trade to report, two provided supplementary information on measures to prevent and address such trade, which has been taken into account in the preparation of the present note.

5. Under decision XXXI/3, on unexpected emissions of CFC-11 and institutional processes to be enhanced to strengthen the effective implementation and enforcement of the Montreal Protocol, parties have been reporting cases of illegal production and consumption of controlled substances. All 31 cases submitted pursuant to that decision are available in a separate online database³ and are also included in the compilation set out below.

6. With a view to avoiding repetition, the present note builds on previous notes prepared by the Secretariat relating to information provided by parties on illegal trade in controlled substances.⁴

7. Section II provides an overview of the reported cases of illegal trade of controlled substances, including the 31 cases of illegal production and consumption, and highlights recurrent patterns in such trade, including in the number of cases reported, the substances most commonly trafficked and the methods of illegal trade. A synthesis is also presented of practices used by national authorities for detecting illegal trade, for enforcement, and for the disposition of detained substances.

8. Section III contains a summary of notable best practices for preventing and addressing illegal trade in controlled substances, as well as several relating to illegal production and consumption, identified among the 321 cases reported since 22 April 2025, adding to those already identified in previous notes on the matter.

II. Compilation of reported cases of illegal trade and synthesis of best practices

A. Number of reported cases of illegal import and export of controlled substances

9. As at 27 April 2026, the database of illegal trade (import and export) in substances controlled under the Montreal Protocol comprised 1,107 cases. The previous note on illegal trade (UNEP/OzL.Pro.WG.1/47/5) covered 786 cases reported between 2002 and April 2025. During the period from April 2025 to April 2026, 18 parties (including two that were doing so for the first time) reported, on a voluntary basis, 321 new cases of illegal trade in controlled substances. An additional 10 parties indicated that they had no cases of illegal trade to report. Two of those parties, however, provided supplementary information on measures to prevent and address such trade. The figure below shows the number of cases reported each year from 2002 to 2026, with the data for 2026 valid as at 27 April 2026.

10. The decisions cited in paragraphs 2 and 3 above call for reporting of fully proved cases, in which relevant legal or administrative proceedings have been completed and it has been established that illegal trade occurred. As noted in paragraph 3 above, in paragraph 3 of decision XXXIV/8, parties were also encouraged to provide additional information about illegal trade situations, to the extent that they were able to do so. Thus, parties also report cases that have not yet been fully proved or in which proceedings are still ongoing. One party has provided updates on the legal outcomes of previously reported cases. In the 2026 annual reminder letter sent to parties, the Secretariat encouraged parties to provide updates, where available, on the legal outcomes of previously reported cases and will continue to do so in future reminders to facilitate information-sharing and the identification of effective enforcement practices.

¹ For the purposes of the present note, the number of cases corresponds to the number of entries in the reporting forms submitted by parties.

² <https://ozone.unep.org/countries/additional-reported-information/illegal-trade>.

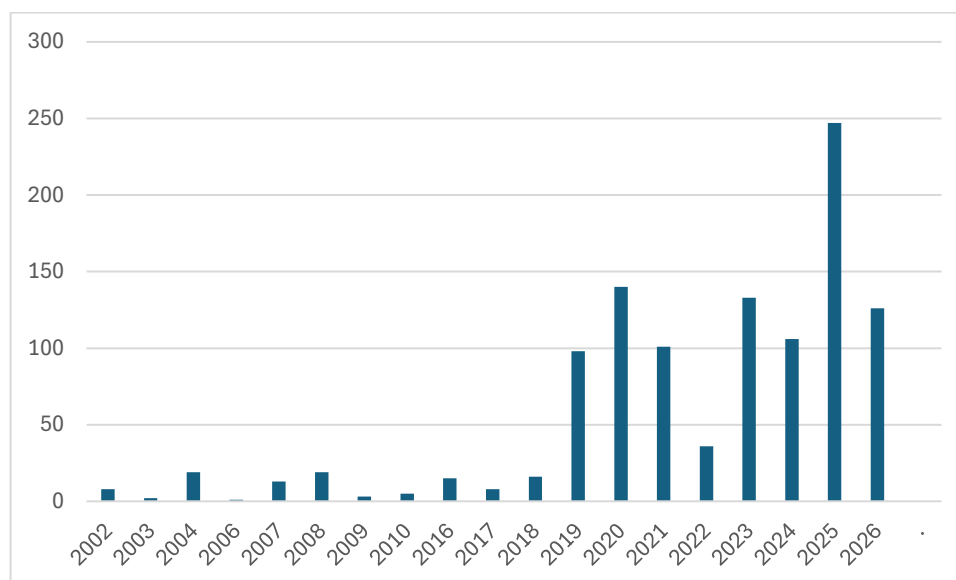
³ <https://ozone.unep.org/countries/additional-reported-information/illegal-trade-decisionxxx13>.

⁴ In particular, documents UNEP/OzL.Pro.WG.1/47/5, UNEP/OzL.Pro.WG.1/46/4 and UNEP/OzL.Pro/Workshop.11/2/Add.1–UNEP/OzL.Pro.WG.1/45/5/Add.1.

B. Parties that reported cases of illegal trade

11. In total, since 2002, when the first cases were reported, the following 51 parties to the Montreal Protocol have reported cases of illegal trade: Angola, Argentina, Armenia, Australia, Belgium, Bulgaria, Burkina Faso, China, Colombia, Croatia, Cyprus, Czechia, Democratic Republic of the Congo, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Honduras, Hungary, Ireland, Italy, Japan, Kenya, Kyrgyzstan, Libya, Lithuania, Mexico, Micronesia (Federated States of), Namibia, Netherlands (Kingdom of the), Nigeria, North Macedonia, Papua New Guinea, Paraguay, Peru, Philippines, Poland, Romania, Seychelles, Singapore, Spain, Sri Lanka, Thailand, Türkiye, Turkmenistan, United Kingdom of Great Britain and Northern Ireland, United States of America, and Uzbekistan.

Number of cases reported, by year of reporting



12. Of those 51 parties, 27 are parties operating under paragraph 1 of Article 5 of the Montreal Protocol (Article 5 parties), while the remaining 24 are parties not so operating (non-Article 5 parties). Two parties – one Article 5 party and one non-Article 5 party – reported cases for the first time during the reporting period. The geographical distribution of all reported cases submitted to date is shown in table 1.

Table 1
Geographical distribution of reported cases

<i>United Nations geographical region</i>	Number of cases reported up to 27 April 2026
African States	35
Asia-Pacific States	78
Eastern European States	589
Latin American and Caribbean States	26
Western European and other States	379
Total	1 107

13. Most of the information submitted by parties and referred to in the present note can be attributed to a small number of countries: 11 parties reported more than 80 per cent of the 1,107 cases reported to date, as table 2 shows.

Table 2
Parties reporting the most cases⁵

<i>Party</i>	<i>Number of cases</i>
Bulgaria	239
United States of America	166
Poland	164
Lithuania	137
France	66
Italy	62
Spain	30
China	16
Germany	16
Seychelles	15
Australia	15
Total	926

C. Substances and volumes traded

14. The cases of illegal trade reported mention around 42 different substances with a total weight of approximately 3.7 million kg, corresponding to emissions of approximately 4.5 billion carbon-dioxide-equivalent (CO₂-equivalent) tonnes. In the 321 newly reported cases, the total weight of the substances is more than 751,222 kg.

Table 3
Most common substances^a traded illegally, by number of cases reported, weight and percentage of total weight^b

<i>Substance</i>	<i>Number of reported cases</i>	<i>Total weight by substance</i>	<i>Percentage of total substance weight</i>
HFC-134a	380	594 201	15.6
R-404A	215	358 803	9.5
R-410A	121	441 062	11.6
HCFC-22	101	392 795	10.3
HFC-32	52	62 324	1.6
CFC-12	42	340 815	8.9
R-407C	32	66 372	1.7
HFCs (unspecified)	22	369 423	9.7
R-507A	19	136 502	3.6
HFC-125	11	57 756	1.5
Total	995	2 820 053	74

^a All pure substances are indicated by their chemical type, such as HCFC (hydrochlorofluorocarbon) or HFC (hydrofluorocarbon), and blends/mixtures are identified by their designation using the "R" prefix.

^b Some reported cases did not include the weight of the relevant substance and could therefore not be included in the weight calculation. Consequently, the resulting totals are approximate.

15. Across the 1,107 reported cases of illegal trade, 753 involved illegal imports of controlled substances reported by the destination country. A total of 73 cases related to illegal exports reported by the exporting country. In 41 instances, the substances were in transit through the reporting country. In other cases, the importing and/or exporting country was not specified or remained unknown at the time of reporting.

16. Thirty-five cases involved the illegal trade of equipment containing controlled substances, including air-conditioning units, heat pumps, chillers, refrigerators, ice-making machines, ice cream makers and fire extinguishers. The controlled substances most frequently associated with such

⁵ For the purposes of the present note, the number of cases corresponds to the number of entries in the reporting forms submitted by parties (see footnote 1 above).

equipment were HCFC-22, HFC-32, R-410A and CFC-12. Among the 321 newly reported cases, 17 related to equipment containing controlled substances.

D. Overview of all illegal trade and illegal production cases reported

1. Cases of illegal import and export

(a) Illegal trade methods

17. The review of the 1,107 reported cases of illegal import and export reveals that the most prevalent methods used in illegal trade involve both documentary non-compliance and physical evasion. Smuggling is the most frequently reported method (192 cases), followed by trading without the required licences and/or quota allocations (166 cases) and smuggling of non-refillable cylinders (139 cases), either alone or in combination with other violations.

18. Misdeclaration of substances (cited alone in 92 cases, and in 168 cases overall), non-declaration (121 cases) and mislabelling (39 cases alone; 54 cases overall) were frequently reported in combination with smuggling. Concealment was reported independently in 30 cases and in a further 113 cases in combination with other methods, including within legitimate shipments. Quota-related violations, including absence of quotas, exceeded quotas, misuse of exemptions and cases involving unregistered operators or missing documentation, are common and reflect gaps in licensing, registration and quota management. In 71 cases, the method of illegal trade was recorded as “unknown”.

19. Among newly reported cases, the most common methods involved a combination of non-declaration of substances and smuggling of non-refillable cylinders (61 cases). Lack of licences and quotas was reported in 68 cases, while misdeclaration was reported in 40 cases. Many cases involved two or more methods, underscoring the layered nature of illegal trade practices.

(b) Detection methods

20. The information reported indicates that detection relies primarily on routine customs controls at points of entry. The most frequently cited methods are random checks (253 cases), documentation inspections (188 cases) and physical inspection of shipments (157 cases). More targeted approaches were reported less frequently, including intelligence or tip-off information (25 cases) and risk profiling (29 cases). Other methods included data monitoring and analysis for discrepancies (5 cases), post-clearance audit (4 cases), laboratory analysis of cylinder contents (2 cases), prevention of illegal trade with the help of the informal prior informed consent (iPIC) procedure (1 case), self-reporting (1 case), and X-ray scanning of cargo (1 case). The use of refrigerant identifiers was mentioned in 13 cases, including in combination with other methods.

21. In the newly reported cases, document- and shipment-based inspections remained the most prevalent methods, accounting for 82 cases, indicating continued reliance on these front-line controls. Two parties that indicated that they had no cases of illegal trade to report attributed this situation to inter-agency collaboration between customs and other enforcement authorities to implement risk management approaches aimed at preventing illegal trade.

22. The data underscore the importance of maintaining strong front-line inspection capacity, as standard customs controls continue to play a central role in identifying non-compliant shipments. At the same time, the concentration of detection within customs-led processes may indicate limited involvement of other enforcement actors, with a risk that shipments not subject to inspection may evade detection. The relatively limited use of intelligence-led and risk-based approaches suggests scope for further strengthening complementary measures. Greater integration of intelligence, risk profiling and technical tools, together with enhanced inter-agency cooperation, could improve the ability of enforcement authorities to detect more cases of illegal trade and support a more comprehensive enforcement response.

23. Another category of cases includes those with no recorded detection method or in which details are vague and mixed with other information. In 397 cases (including some of the newly reported ones), full understanding of the enforcement practices applied and their impact is limited by the scarcity of details provided. The Secretariat continues to engage with parties to seek clarification on reported information, with a view to enhancing completeness and consistency, while remaining mindful of the need not to increase the reporting burden on parties.

(c) Enforcement actions

24. The review of all 1,107 reported cases reveals that enforcement actions⁶ vary in type and severity. The actions have been applied in graduated and combined ways in accordance with the enforcement cycle.

25. Once an illegal trade incident is detected, seizure (understood as temporary deprivation of goods)⁷ of the controlled substances or equipment imported or attempted to be exported illegally is often an initial measure to prevent goods from entering the market, pending clarification of the investigation. Seizure is followed by a complaint to administrative or judicial authorities and the initiation of administrative or criminal proceedings, with anti-smuggling and/or environmental laws cited as the basis for the proceedings.

26. Legal outcomes of the proceedings mentioned in the reported cases include:

(a) Seizure or confiscation (permanent removal from possession),⁸ recorded in approximately 636 cases;

(b) Monetary fines and penalties, applied in approximately 265 cases, with significant variation in severity depending on the nature and scale of the violation, including a \$25 fine for the illegal import of 36 kg of HFC-134a and CFC-12 into an Article 5 party through concealment, a \$12,700 fine for the illegal import of 544 kg of HCFC-22 into an Article 5 party without a licence and through misdeclaration, and a \$40,000 fine for the illegal import of 22,900 kg of HCFC-22 into a non-Article 5 party through misdeclaration and mislabelling;

(c) Re-export or denial of entry, including goods returned to the country of origin or denied entry at the border, recorded in approximately 215 cases;

(d) Criminal charges, filed in approximately 63 cases, involving individuals and legal entities engaged in illegal trade, with outcomes including confiscation, fines, suspension or revocation of licences, arrests and, in some cases, imprisonment;

(e) Compliance orders, requiring offenders to regularize their activities under applicable licensing and quota systems prior to release or legal circulation of goods, recorded in approximately 26 cases;

(f) Case closure following regularization or administrative agreement between offenders and authorities, recorded in approximately 44 cases;

(g) Other enforcement measures, including destruction of goods at the offender's cost (12 cases), warnings or notifications (12 cases), and suspension, revocation or redistribution of licences and quotas, particularly in relation to cases involving quota exceedance and documentation-related violations.

27. In the newly reported cases, the most common enforcement actions were confiscation or seizure, denial of entry or re-export, monetary fines or penalty notices, and case closure following regularization (see para. 33 below for details on methods of regularization).

28. On the basis of the cases reviewed, applying a combination of enforcement actions and resulting penalties based on a comprehensive legal framework represents a more robust enforcement response. For example, fines for violations can be imposed in conjunction with other forms of penalty, such as confiscation, re-export or destruction at the violator's cost. In such instances, the total financial burden on the violator can be significant, which serves as an effective deterrent.

29. "Ongoing" investigations, prosecutions or legal proceedings were recorded in approximately 153 cases. In 60 cases, it was not possible to determine the final enforcement outcome due to limited information provided by reporting parties. This may reflect delays in administrative or judicial processes, particularly in cases requiring inter-agency coordination, or gaps in case tracking and reporting systems. In recent years, the Secretariat has encouraged parties to provide updates on previously reported cases in order to improve the completeness of outcome data and support a more accurate assessment of enforcement effectiveness across both Article 5 and non-Article 5 parties.

⁶ For the purposes of the present note, the terms used to refer to the different enforcement actions were informed by the cases reported. It is recognized, however, that their legal definitions may vary from country to country.

⁷ United Nations Office on Drugs and Crime, *Manual on International Cooperation for the Purposes of Confiscation of Proceeds of Crime* (United Nations publication, 2020), which derived the definition from the United Nations Convention against Transnational Organized Crime.

⁸ Ibid.

(d) Disposition of detained substances

30. In paragraph 5 of decision XXXVI/9, parties were invited to provide information on how they address the disposition of detained substances (understood as the final treatment of the detained substance, including, when applicable, its destruction or the transfer of its ownership or control after the completion of legal proceedings). Effective disposition ensures that restricted or prohibited goods are removed from circulation and prevents their re-entry into legal markets.

31. The review of disposition methods reported by parties revealed that destruction, reported in 283 cases, is the most frequently applied method of final disposition and was primarily used for substances with high ozone-depleting or global-warming potential. The use of this method in the reported cases reflects the availability of appropriate destruction facilities.

32. In 137 cases, when the goods could not be legally imported, they were re-exported (i.e. returned to the exporting country). While re-export may address immediate import non-compliance, its effectiveness depends on subsequent controls in the exporting country and on the existence of adequate coordination to ensure that returned goods do not re-enter circulation.

33. The release of goods back into circulation following resolution of the initial non-compliance was reported in 61 cases. In 44 of those cases, goods were released directly to their owner, either following regularization of import conditions, where import requirements were subsequently fulfilled through the presentation of valid licences, quota allocations or other required documentation, or after payment of a fine or issuance of a compliance order. In eight additional cases in which goods had initially been detained pending verification, these were permitted to be exported or re-exported following presentation of a valid import licence or completion of the documentation requirements. The remaining nine cases involved release into the market or general circulation following compliance with applicable regulatory requirements or an administrative determination that no intentional violation had occurred.

34. Other options mentioned included auctioning the goods to eligible companies. While this approach may enable administrations to recover resources, available quotas should not be exceeded. Storage at the customs premises was also mentioned. In those cases, the final outcomes of the processes are not known and updates have not been provided to the Secretariat. In a small number of cases, handling was reported to include sending the substance to recycling facilities or donating it to naval services.

35. In a large number of cases (507), the final disposition of the detained substances was unspecified. The cases may relate to ongoing investigations, pending decisions or unresolved proceedings. In general, national procedures for disposition of controlled substances, including a defined timeline for case resolution, can be considered a good practice that could prevent accumulation and accidental leakage of detained substances during storage. Strengthening reporting on final outcomes could support improved monitoring and help identify additional effective approaches for the management of detained controlled substances.

2. Cases reported under decision XXXI/3

36. Over the period 2022–2026, four parties, specifically China, Netherlands (Kingdom of the), the United Kingdom and the United States, reported a total of 31 cases of illegal production and consumption pursuant to paragraph 5 (d) of decision XXXI/3. These cases include instances in which illegal import had occurred.

37. These types of activities are primarily characterized by quota-related violations, including imports of regulated HFCs conducted without sufficient allocations or authorizations. Other reported cases involve illegal production of substances such as HCFC-141b, HCFC-22 and HFCs, as well as the sale or distribution of prohibited goods, including non-refillable cylinders containing HFC-134a, in contravention of domestic regulatory frameworks. Some cases also reflect failures to meet regulatory requirements, including the absence of required certification or labelling.

38. Detection methods reported in these cases included physical inspections, whistle-blower reports and data-based approaches, such as reporting and cross-verification systems and the analysis of customs data. Cross-border information-sharing arrangements, including between the United Kingdom and the European Union, were also reported.

39. The enforcement actions reported encompass a range of administrative, civil and criminal measures, including the revocation and redistribution of quota or consumption allowances, seizure and destruction of substances, and the imposition of monetary fines or penalties. Administrative measures are prominently reflected, particularly in cases involving imports carried out without the requisite

authorizations, where quota or consumption allowances are adjusted within established regulatory frameworks. Civil penalties were applied in response to failures to obtain sufficient quota authorizations, while criminal measures, including seizure and destruction, were used in relation to prohibited products such as non-refillable cylinders.

III. Summary of best practices

40. The comprehensive review of illegal trade cases reported by parties revealed several best practices, as synthesized above, that are understood to effectively support enforcement across the full cycle of responses to illegal trade: prevention, detection, addressing violations, and disposition of detained substances. Some of the practices, along with others, have already been highlighted in previous notes (see para. 6 above). The use of these practices demonstrates a systematic approach to combating illegal trade.

41. This section highlights some of the practices identified among the 321 newly reported cases of illegal trade and six additional cases of illegal production and consumption, thus building on the previous notes:

(a) Clearly defined legislative and regulatory frameworks, including licensing and quota systems supported by proportionate penalties, provide a strong basis for enforcement and contribute to consistent regulatory implementation while allowing flexibility in responding to different types of violations;

(b) Coordination among relevant national authorities, including customs services, environmental agencies and other competent bodies, as well as cross-border cooperation in information-sharing, strengthens enforcement and supports the prevention of illegal trade, including through structured information exchange and joint action at border entry points. Mechanisms such as the iPIC system illustrate this approach;

(c) Engagement with the private sector and industry stakeholders, including licensed importers, distributors and industry associations, supports early detection through tip-offs and voluntary reporting. Such cooperation has, in a number of cases, contributed to the initiation of enforcement action;

(d) The use of modern detection tools and risk-based inspection approaches at border entry points, including refrigerant identifiers, profiling techniques, laboratory testing and other inspection technologies, supports the identification of controlled substances and helps address misdeclaration, concealment and other forms of non-compliance;

(e) Complementing border controls with post-clearance document audits and in-market surveillance allows authorities to detect violations occurring after goods have entered circulation, including quota exceedances and unregistered operators, and supports broader oversight of the supply chain;

(f) Continued monitoring of online platforms and e-commerce environments, supported by cooperation and information-sharing with relevant stakeholders, remains important given the increasing use of digital channels for illegal trade;

(g) Measuring violations in terms of CO₂-equivalent emissions provides a basis for assessing the scale of non-compliance and supporting proportionate enforcement responses based on environmental impact;

(h) The use of quota adjustments, including the redistribution of revoked allowances to compliant entities, supports market-based incentives for compliance and reinforces adherence to licensing and quota systems;

(i) Targeted enforcement actions focusing on high-global-warming-potential substances and ozone-depleting substances, including associated equipment and applications such as refrigerants used in automotive air-conditioning systems, and non-refillable cylinders, improve the effectiveness of control measures;

(j) Integrated compliance frameworks combining licensing systems, border inspections, inter-agency coordination and capacity-building of enforcement officers strengthen the overall effectiveness of national enforcement systems;

(k) The availability of appropriate destruction facilities is a key prerequisite for the use of destruction as a disposal method. Where such facilities are not available domestically, authorities have resorted to re-export, which may carry a risk of re-entry into circulation. Strengthening access to national or regional destruction capacity enhances the integrity and effectiveness of enforcement outcomes.

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