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THE ENVIRONMENTALLY SAFE DISPOSAL AND DESTRUCTION OF INTELLECTUAL PROPERTY INFRINGING GOODS – FULL STUDY*

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ABSTRACT

This study provides an introduction to the main issues surrounding the environmentally safe disposal and destruction of intellectual property (IP) infringing goods. It maps out the applicable legal and practical frameworks, taking into account both IP and environmental perspectives, and summarizes the core environmental concerns related to the destruction and disposal of common types of IP infringing goods. Analyzing challenges and opportunities for improvement, the study discusses the strengths and drawbacks of common and alternative methods of destruction and disposal, as well as recycling and re-use initiatives. Specific attention is given to practical considerations, such as restraints on physical and financial resources, particularly as they pertain to developing countries. Stressing the important role of awareness campaigns and education as well as alternative disposal options and recycling, the study calls for cooperation on building capacity of key actors through the provision of training initiatives and tailored educational materials.

* The Executive Summary of this study is available at: http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=375396.

** The views expressed in this document are those of the author and not necessarily those of the Secretariat or of the Member States of WIPO.

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I. TERMS OF REFERENCE

A. BACKGROUND

1. How to best destroy or dispose of outside the channels of commerce goods that have been found to be intellectual property (IP) infringing is an acute question for policy makers, judges and prosecutors as well as customs and other law enforcement officials. While the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) requires, in Articles 46, 59 and 61, the members of the World Trade Organization (WTO) to provide in their domestic legal framework for the remedy of destroying or disposing of IP infringing goods, the practical implementation of this postulate often proves challenging. Not only is it costly to store and dispose of IP infringing goods, but – as these goods have been produced outside the system of licit trade with all its regulatory safeguards – competent authorities cannot be sure that their destruction does not pose a risk to the environment or public health and safety.

B. OBJECTIVES

2. This study was preceded by three WIPO activities specifically dedicated to the disposal of IP infringing goods in 2010, 2012 and 2013¹, and the topic is a recurring theme in most WIPO capacity-building activities in the area of building respect for IP. The topic has equally been addressed by the WIPO Advisory Committee on Enforcement (ACE) through two expert documents². The documents provide a useful overview of the numerous issues that relevant stakeholders (policy makers, government authorities, the judiciary, right holders) face when IP infringing goods are destroyed or disposed of outside the channels of commerce. Building upon this foundation, the present study provides a more focused analysis of the applicable environmental considerations.

3. This study aims to:

- provide an introduction to the problem of destroying / disposing of IP infringing goods;
- concisely map out the legal framework for the destruction / disposal of IP infringing goods from the perspective of both IP and environmental law under which IP infringing goods may fall and the practical importance of this categorization, highlighting instances in which the law prescribes specific methods of destroying / disposing of IP infringing goods;
- explain the specific environmental concerns that the destruction /disposal of IP infringing goods raises, categorizing IP infringing goods according to the extent to which their destruction / disposal would pose a threat to the environment; and

¹ WIPO-USPTO Asia-Pacific Regional Workshop on the Disposal of Goods, Siem Reap, Cambodia, July 12 to 14, 2010; WIPO-United Nations Environment Programme Regional Workshop on the Disposal of Counterfeit Goods for the Judiciary, Law Enforcement Officials and Environmental Officers, Bangkok, Thailand, July 3 and 4, 2012; and WIPO-UN ESCAP-United Nations Environment Programme Regional Workshop on the Environmentally Safe Disposal of Intellectual Property Infringing Goods, Bangkok, Thailand, November 21 and 22, 2013.

² Ronald Brohm (2009), *Addressing Costs and Balancing Rights* (WIPO/ACE/5/7), available at: http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=129645, and David Blakemore (2010), *Study Relating to Existing Methods of Disposal and Destruction of Counterfeit Goods Within the Asia Pacific Region* (WIPO/ACE/6/8), available at: http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=143352.

- add a practical dimension to the former theoretical considerations by choosing several specific types of IP infringing goods with varying potential risks for the environment and analyzing the relevant issues in more detail.

II. INTRODUCTION

A. THE SCALE OF THE TRADE IN IP INFRINGING GOODS

4. The illicit production and trafficking of IP infringing goods is an escalating global phenomenon that not only generates negative economic and ethical consequences for right holders, governments and the economy, but can also harm the environment and threaten consumer public health and safety.

5. The global scale of trade in counterfeit and pirated goods has been determined through the analyses of global customs seizure data conducted by the Organization for Economic Co-operation and Development (OECD) and the European Union Intellectual Property Office (EUIPO), with information provided by the World Customs Organization (WCO), the European Commission's Directorate-General for Taxation and Customs Union (DG TAXUD) and the United States Department of Homeland Security (DHS).³

6. These analyses consider the economic impact of counterfeiting and piracy on legitimate trade, the negative effects on right holders and, consequently, on innovation, employment and long-term economic growth. As with most aggregated statistical datasets there will be inevitable gaps and limitations, but taking these caveats aside the resulting findings provide a relevant account of the impact of counterfeiting and piracy on world trade.

7. In addition, recurrent global and regional customs seizure operations of IP infringing goods such as Operation Jupiter (Latin America), Operation Opson (Europe), Operation Mamba (East Africa), Operation Storm (Asia), Operation Cobra (West Africa), Operation Gibioa (Southern Africa), Operation Porcupine (West Africa), Operation Biyela (Africa) and Operation Pangea (targeting illegal medicines on the internet), undertaken by the International Criminal Police Organization (Interpol), the European Police Office (Europol), and the WCO together with national governments further provide valuable information on the volume of trade in IP infringing goods.

8. The 2016 OECD report indicates that in 2013 IP infringing goods accounted for 2.5 per cent of the global trade, or as much as 461 billion US dollars, representing an increase from a comparable estimate of 1.9 per cent for 2008⁴. In the European Union (EU), the situation is more pronounced with up to five per cent of imports recorded as IP infringing goods with an estimated value of 116 billion US dollars⁵. These findings clearly signify a major loss of income and threat to legitimate business interests, governments and consumers.

³ The terms "counterfeit goods" and "pirated goods" as used in this study are defined in the TRIPS Agreement, Article 51, Note 14: "For the purposes of this Agreement: (a) 'counterfeit trademark goods' shall mean 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 of importation; (b) 'pirated copyright goods' shall mean any goods which are copies made without the consent of the right holder or person duly authorized by the right holder in the country of production and which are made directly or indirectly from an article where the making of that copy would have constituted an infringement of a copyright or a related right under the law of the country of importation".

⁴ OECD and EUIPO (2016), *Trade in Counterfeit and Pirated Goods: Mapping the Economic Impact*, available at: <http://dx.doi.org/10.1787/9789264252653-en>.

⁵ Europol and EUIPO (2015), *Situation Report on Counterfeiting in the European Union*, available at: <https://www.europol.europa.eu/publications-documents/2015-situation-report-counterfeiting-in-european-union>.

9. While the majority of IP infringing goods seems to be sourced from Asia, the production and trafficking of IP infringing goods is widespread with illicit goods originating from virtually all economies and continents, which further complicates efforts by authorities to detect such goods⁶.

B. THE RANGE OF IP INFRINGING GOODS

10. Practically all types of IP protected products are infringed; this may include counterfeit high-end luxury goods such as counterfeit watches, perfumes and leather goods, electronic products consisting of computers, mobile telephones, computer equipment and televisions, commercial equipment such as generators and air conditioning units, agricultural or industrial products including pesticides, agrochemicals, fertilizers, refrigerants, solvents and paints, general consumer products such as cleaning chemicals, pharmaceuticals, veterinary drugs, cosmetics, toys, batteries, vehicle spare parts, firefighting equipment, alcohol, cigarettes and foodstuff (which in some cases may be adulterated with toxic ingredients) and pirated goods such as CDs/DVDs, computer software and games.

11. The trade in counterfeit and pirated goods is a way to make money by bypassing research, development and marketing and avoiding production and employment regulations and standards. As a result, counterfeit goods are often of sub-standard quality or of unknown and sometimes dubious chemical/material composition. Moreover, some infringing goods, such as counterfeit pesticides and industrial chemicals, are inherently toxic and, together with other potentially harmful or health sensitive IP infringing goods (e.g., counterfeit pharmaceuticals, cosmetics, contaminated refrigerants for air conditioners, electronics and tainted foodstuffs), can represent a significant environmental and public health threat for both the consumer or, in instances where seized goods need to be destroyed or disposed of, the wider general public.

C. PROBLEMS WITH THE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS AND THEIR IMPACT ON SUSTAINABLE DEVELOPMENT

12. Considering the huge volume and wide diversity of IP infringing goods, managing seizure operations from processing to destruction represents a significant burden for enforcement agencies. While the costs for such work should ideally be recovered from the infringers or criminal organizations that produced or imported the illicit goods, in practice costs for such operations are most often incurred by right holders and taxpayers.

13. Likewise, to ensure that seized IP infringing goods are either stored, destroyed, disposed of or recycled in an environmentally safe way with minimal health and safety implications, is in itself often a complex and difficult task, especially for hazardous materials⁷. This is particularly evident in countries where technical capacity, appropriate storage and waste facilities, regulatory control and funds are more limited. The task can be particularly acute following specifically coordinated customs seizure operations in which a large number of IP infringing goods are confiscated over a short timeframe, creating pronounced influxes of IP infringing products that may stretch the enforcement authorities' ability to effectively and correctly store and destroy / dispose of them.

⁶ OECD and EUIPO (2016), *op. cit.*, p. 12.

⁷ An IP infringing good can be defined as hazardous if it poses a substantial or potential threat to public health or the environment and exhibits one or more of the following five hazardous characteristics: flammable, explosive, reactive, corrosive or toxic.

14. With an ever-increasing volume of seized IP infringing goods, storage facilities can rapidly become limiting as well as costly. This is often exacerbated by extended litigation procedures or the protracted time required for analyzing seized goods to determine their composition or hazard before destruction or disposal can proceed.

15. With regard to the destruction or disposal of IP infringing goods, available methodologies include but are not limited to: incineration, open burning, recycling⁸, shredding, crushing, chemical treatment, encapsulation⁹, inertization¹⁰ and landfill.

16. In some countries, seized goods may frequently be destroyed through open burning or disposal into open non-sanitary landfills, often poorly located and highly unsuitable for hazardous materials.

17. Open burning is by far the most inappropriate disposal method for IP infringing goods with the potential of devastating and long-term effects on both the environment and human health. Despite this, it is repeatedly used and is the main method generally employed at showcase events aiming to raise public awareness of the counterfeit problem¹¹. Burning infringing products along with their plastic packaging materials at low temperatures can release a large volume of toxic fumes such as persistent organic pollutants (POPs), organic compounds which are resistant to environmental degradation, affecting both workers and waste pickers with direct exposure to toxic fume or with potential for leachates to pollute surrounding soils and waterways. Toxins can be absorbed by people through smoke, fumes and vapors, or following settlement on the surrounding environment through bioaccumulation or bio-magnification in the food chain. Exposure to smoke and vapors can cause respiratory ailments, headaches and eye problems while emissions of POPs and other toxins are linked to:

- certain types of cancers;
- liver problems;
- impairment of the immune system, the endocrine system and reproductive functions; and
- effects on the developing nervous system and other developmental events.

18. Furthermore, goods at the base of the burning pile may often fail to be adequately destroyed, resulting in the danger they may be re-utilized and re-enter the channels of commerce.

19. Similarly, the disposal of IP infringing goods to non-sanitary and open landfills can result in environmental and potential health impacts through the escape of contaminating or toxic leachate, polluting soils, groundwater and inland/coastal waterways, together with the release of foul odors and the proliferation of disease vectors. In addition, such landfills usually encourage community waste pickers and scavenging, which can expose individuals to harmful materials directly or through toxic releases when scavenged materials such as e-wastes (discarded electrical or electronic devices) are burned for copper and other metals. There is also the added danger that seized goods not adequately disposed of or fully destroyed prior to disposal may re-enter the channels of commerce either as the originally infringing product or in an adapted form. Sanitary or engineered landfills in contrast will be security protected to prevent

⁸ For a more detailed description of recycling, see below paragraphs 97 to 104 and 148 to 151.

⁹ For a more detailed description of encapsulation, see below paragraph 88.

¹⁰ For a more detailed description of inertization, see below paragraph 89.

¹¹ In a review of news items reporting on the destruction of counterfeit pharmaceutical goods no less than 15 burning events were observed and in most cases photographs indicate the inclusion of all packaging including plastic containers (which will result in the release of toxic fumes and residues). As to the recommended disposal methods at showcase events, see below paragraphs 138 to 141.

scavenging and will include appropriate leachate catchment and methane gas controls to prevent negative environmental and public health impacts.

20. In countries with more robust regulatory frameworks, specialized facilities for environmentally safe waste disposal and recycling of seized IP infringing goods are more common. These facilities respond to the need for business and government compliance with environmental conventions, directives, laws and policies and the current recognized need to work towards a "circular economy" and the benefits therein. For example, improved production processes aimed at waste minimization and re-use or recycling of product materials and packaging can provide major cost savings to businesses, improved reputation with consumers as well as important tangible environmental benefits.

21. It is these elements that conform with the drive towards sustainable development where environmental stewardship, social progress and economic development are integrated under the principle that one concern is not rectified at the expense of the other and that all parties have a responsibility to ensure a "cradle to grave" approach. The production and trafficking of IP infringing goods, however, represents a direct threat to sustainable development and the achievement of the Sustainable Development Goals (SDGs) owing to their negative impacts on licit trade, economic growth, consumer health, food security, livelihoods and the environment, either from the infringing goods themselves while in channels of commerce or when their destruction or disposal is inadequate and further damaging.

22. Furthermore, trade in IP infringing goods is indirectly responsible for the diversion of funds away from government programs and resources (e.g., social services) in order to respond to increased security priorities such as law enforcement and border control¹².

23. IP enforcement primarily aims at indicting infringers and removing infringing goods from the channels of commerce through their seizure and destruction. This notwithstanding, more emphasis, focus and control is still required, especially in developing countries, to ensure that the destruction or disposal of seized goods is conducted in an appropriate environmentally safe manner in line with applicable environmental and public health legislation, proven good practice and accountability.

24. In this respect, improvements could be made to ensure that appropriate technical capacity and training is obtainable, that adequate technologies and tools are provided, that financial support is available where necessary and that improved monitoring, quantification of success and feedback mechanisms for the environmentally safe destruction and disposal of IP infringing goods are developed. Conversely, in the absence of such initiatives, the environmental or health impacts associated with inappropriate and poorly controlled destruction or disposal of seized IP infringing goods may in the long term show to be just as much or even more damaging than the effect of the IP infringing goods themselves. This begs further investigation and consideration.

¹² The Global Initiative Against Transnational Organized Crime (2015), *Organized Crime: A Cross-Cutting Threat to Sustainable Development*, available at: <http://globalinitiative.net/wp-content/uploads/2015/01/Organized-Crime-A-Cross-cutting-Threat-to-Sustainable-Development-2015.pdf>.

III. THE IP PERSPECTIVE – LEGAL AND POLICY FRAMEWORKS RELEVANT TO THE ENVIRONMENTALLY SAFE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

A. THE AGREEMENT ON TRADE RELATED ASPECTS OF INTELLECTUAL PROPERTY RIGHTS

25. The Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS Agreement) is the most comprehensive multilateral agreement on IP and came into force in 1995. It sets down global minimum standards for protecting and enforcing IP, and the 164 members of the World Trade Organization (WTO) are required to adapt their laws to implement these standards.

26. The TRIPS Agreement clarifies that the destruction and disposal of IP infringing goods must be an available remedy in civil and administrative procedures, criminal procedures and in the context of border measures. With regard to civil procedures¹³, Article 46 stipulates that the judicial authorities of WTO members must have the power to order “that goods they have found to be infringing be (...) disposed of outside the channels of commerce (...) or destroyed”. The disposal is carried out “without compensation of any sort” and “in such a manner as to avoid any harm caused to the right holder”. In addition to the goods themselves, judicial authorities can also order the disposal or destruction of “materials and implements the predominant use of which has been in the creation of the infringing goods”¹⁴.

27. In the context of border measures, the authorities competent to order the suspension of the release into free circulation of allegedly counterfeit trademark or copyright pirated goods also have the power to “order the destruction or disposal of infringing goods” (Article 59). Such an order does not preclude the right holder to take other actions, is subject to judicial review at the request of the defendant and needs to be made in accordance with the principles that apply in civil procedures¹⁵.

28. As for criminal procedures¹⁶, Article 61 stipulates that the available remedies “shall also include the seizure, forfeiture and destruction of the infringing goods and of any materials and implements the predominant use of which has been in the commission of the offence”.

29. The TRIPS framework for the disposal and destruction of IP infringing goods was also the subject of a dispute between China and the United States of America before the WTO Dispute Settlement Body (DS 362)¹⁷.

¹³ Where the domestic laws of WTO members allow for civil remedies to be ordered as a result of administrative procedures on the merits of a case, the competent administrative authority would also need to have the power to order the disposal and destruction of IP infringing goods according to the same principles; see Article 49.

¹⁴ A particularity exists in relation to counterfeit trademark goods, where “the simple removal of the trademark unlawfully affixed shall not be sufficient, other than in exceptional cases, to permit release of the goods into the channels of commerce”.

¹⁵ Again, counterfeit trademark goods are subject to a qualification. In their regard, “the authorities shall not allow the re-exportation of the infringing goods in an unaltered state or subject them to a different customs procedure, other than in exceptional circumstances” (Article 59).

¹⁶ The TRIPS Agreement obliges WTO members to provide for criminal procedures and penalties to be applied “at least in cases of willful trademark counterfeiting or copyright piracy on a commercial scale” (Article 61). In application of Article 1.1, however, members are free to provide for criminal procedures also in case of other types of IP infringements.

¹⁷ DS362, *China — Measures Affecting the Protection and Enforcement of Intellectual Property Rights*, available at: https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds362_e.htm. The adopted Panel Report provides clarification on specific aspects of the application of the framework for disposal and destruction, in particular in relation to the compatibility of auctions, donations to social public welfare bodies and sale to the right holder with Articles 46 and 59.

B. NATIONAL FRAMEWORKS FOR THE ENVIRONMENTALLY SAFE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

30. The TRIPS Agreement provides a basic international framework for the availability of disposal and destruction as a remedy in IP enforcement actions in the domestic legal systems of WTO members, it does not prescribe how the destruction or disposal should be conducted, nor does it specifically indicate that such destruction / disposal should conform to good environmental practices.

31. States typically implement the minimum standards foreseen by the TRIPS Agreement by making available to the right holder criminal procedures, civil or administrative procedures and procedures that lead to action being taken at the border. They are free, however, to choose the concrete means of implementation and, as a consequence, the specific legal rules laying down the conditions for these procedures or remedies are diverse.

32. In a 2015 situation report on counterfeiting in the EU,¹⁸ Europol and the EUIPO utilized contributions from EU Member State enforcement authorities and the private sector to identify the main traits of the production and trafficking of counterfeit goods in the EU. The report highlighted the lack of harmonization between EU Member States in matters relating to the storage and destruction of IP infringing products and identified areas of divergence. These areas included variance in the amounts of recoverable legal costs in successful civil proceedings, burden of proof requirements, and liability for storage costs.¹⁹ The report, and other comparative reports of its kind,²⁰ offers a useful review of differences relating to the disposal and destruction of IP infringing goods across EU Member States.

33. At the global scale, however, information on the functioning of national rules on the storage and destruction / disposal of IP infringing goods is scarce. A notable exception is the report on their experiences with the topic that two WIPO Member States prepared that the twelfth session of the WIPO Advisory Committee on Enforcement.²¹

34. Ideally, similar information on the details of national frameworks would be gathered more broadly. It would be particularly interesting to learn where WIPO Member States experience difficulties in their efforts to store and destruct / dispose of IP infringing goods in an environmentally safe way as this would allow to better tailor the capacity-building activities that specialized international organizations such as WIPO undertake. Should Member States be willing to engage in this type of information sharing, WIPO could consider collecting relevant information in a structured way that would allow for a comparative analysis of national legal framework and practices.

¹⁸ Europol and EUIPO (2015), *Situation Report on Counterfeiting in the European Union*, available at: <https://www.europol.europa.eu/publications-documents/2015-situation-report-counterfeiting-in-european-union>.

¹⁹ While most EU Member States require the infringer to bear the costs of the destruction of infringing goods in civil disputes, right holders will usually be liable for storage costs incurred during the proceedings. The State will normally bear the costs of destruction in criminal proceedings but, in customs proceedings, the right holder will usually be responsible.

²⁰ European Observatory on Infringements of Intellectual Property Rights, *Observatory Update on Storage and Destruction (2015)*, available at: https://euiipo.europa.eu/tunnel-web/secure/webdav/guest/document_library/observatory/documents/publications/Observatory+update+on+storage+and+destruction.pdf.

²¹ *National Experiences with the Environmentally Safe Disposal of Intellectual Property Infringing Goods* (document WIPO/ACE/12/4), available at: http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=376236.

C. IP INFRINGING GOODS WITHIN THE FRAMEWORK OF THE WIPO DEVELOPMENT AGENDA, SUSTAINABLE DEVELOPMENT AND THE POST-2015 DEVELOPMENT AGENDA

a) The WIPO Development Agenda

35. IP is more and more being recognized as a legal and economic tool with the potential to affect matters of public policy within States of varying levels of development, which has led to an increased interest in the relationship between IP and development goals. Against this background, it is worth considering whether this discourse has a bearing on the goal of storing and destructing / disposing of IP infringing goods in an environmentally safe way.

36. WIPO Member States adopted the WIPO Development Agenda in 2007 with the aim to ensure that development-orientated considerations form an integral part of WIPO's work. A total of 45 recommendations were adopted to be implemented through actions ranging from practical projects and activities, to the application of certain principles and objectives²².

37. Three of the recommendations in the WIPO Development Agenda make direct reference to the WTO and the TRIPS Agreement:

- Recommendation 14 states that “WIPO shall make available advice to developing countries and LDCs, on the implementation and operation of the rights and obligations and the understanding and use of flexibilities contained in the TRIPS Agreement”.
- Recommendation 40 urges WIPO “to intensify its cooperation on IP related issues with UN agencies, according to Member States’ orientation, in particular [the United Nations Conference on Trade and Development (UNCTAD), the United Nations Environment Programme, the World Health Organization (WHO), the United Nations Industrial Development Organization (UNIDO), the United Nations Educational, Scientific and Cultural Organization (UNESCO)] and other relevant international organisations, especially WTO in order to strengthen the coordination for maximum efficiency in undertaking development programs”.
- Recommendation 45 requires WIPO “to approach intellectual property enforcement in the context of broader societal interests and especially development-oriented concerns with a view that ‘the protection and enforcement of intellectual property rights should contribute to the promotion of technological innovation and to the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in a manner conducive to social and economic welfare, and to a balance of rights and obligations’, in accordance with Article 7 of the TRIPS Agreement”.

38. These recommendations provide both the rationale and justification for action through WIPO and the TRIPS Agreement to:

- ensure technological capacity and knowledge is adequately transferred to countries, in a way that is truly “development orientated” by contributing to better societal and sustainable development benefits; and to

²² See <http://www.wipo.int/ip-development/en/agenda/recommendations.html> for more information.

- achieve this through improved cooperation and engagement with other relevant UN agencies that are aligned to this purpose (e.g., the United Nations Environment Programme).

b) The Sustainable Development Goals

39. Recommendation 22 of the WIPO Development Agenda indicates that “WIPO’s norm-setting activities should be supportive of the development goals agreed within the United Nations system, including those contained in the Millennium Declaration”.

40. The Millennium Development Goal (MDG) most relevant to enforcement and the environmentally safe destruction or disposal of IP infringing goods is Goal 7: Ensure Environmental Sustainability.

41. However, this Goal was considered weak as it did not adequately address environmental challenges. Furthermore, the MDG framework was criticized for promoting “quick-fix” solutions and short-term planning instead of sustainable global management goals and structural changes²³.

42. Sustainable development embodies the realization that environmental problems cannot be tackled in isolation and rather are inextricably linked to economic development and social progress. Thus, to respond to this concept requires economic, social and environmental policies and practices to be adopted in an integrated approach such that one concern is not remedied at the expense of the other.

43. On 25 September 2015, the UN General Assembly adopted the Sustainable Development Agenda entitled “Transforming Our World: the 2030 Agenda for Sustainable Development”. The Official agenda includes 17 SDGs and 169 associated targets.

44. The SDGs offer major improvements over the MDGs as the SDG framework addresses key systemic barriers to sustainable development such as inequality, unsustainable consumption patterns, weak institutional capacity, and environmental degradation that the MDGs neglected.

45. The Global Initiative Against Transnational Organized Crime has reasoned that the production and trafficking of IP infringing goods signifies a direct and cross cutting threat to the achievement of the SDGs and associated targets through their negative impact on legitimate commerce, poverty reduction, employment, sustainable food production, public health and wellbeing and the environment²⁴.

46. In respect of IP infringing goods and their relationship with the SDGs, without adequate measures to ensure that their destruction or disposal is conducted in an environmentally safe manner, both public health impacts and environmental damage are likely to occur. This is particularly relevant in the case of hazardous goods. For example, open burning and ineffective disposal of counterfeit chemicals, pharmaceuticals, cosmetics and electrical or electronic goods

²³ International Council for Science (ICSU) and International Social Science Council (ISSC) (2015), *Review of the Sustainable Development Goals: The Science Perspective*, available at: <https://www.icsu.org/publications/reports-and-reviews/review-of-targets-for-the-sustainable-development-goals-the-science-perspective-2015>.

²⁴ The Global Initiative against Transnational Organized Crime (2015), *Organized Crime: A Cross-Cutting Threat to Sustainable Development*, available at: <http://globalinitiative.net/wp-content/uploads/2015/01/Organized-Crime-A-Cross-cutting-Threat-to-Sustainable-Development-2015.pdf>.

(e-waste) into open landfills or informal recycling industries may result in the release of toxic fumes and human contact with hazardous materials²⁵. In addition, soils, groundwater or watercourses may become polluted, potentially affecting soil fertility, clean water supplies and impacting on fish and other resources vital for human wellbeing (SDGs 3, 6, 14, 15). Likewise, ineffective disposal of these goods will further contribute toward the estimated 10 per cent of manmade greenhouse gases accounted for by poorly managed waste (SDG 13).

47. If the negative impacts of IP infringing goods on the SDGs are to be avoided and if better management of the destruction and disposal of IP infringing goods is to be realized, all parties – be they the judiciary, enforcement agencies, environmental agencies, or right holders – have to buy into the concept of sustainable development and recognize they all have a vital and collaborative role to play so as to improve these important aspects and bring about positive change.

IV. THE ENVIRONMENTAL PERSPECTIVE – LEGAL FRAMEWORKS RELEVANT TO THE ENVIRONMENTALLY SAFE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

48. Once an IP infringing good is seized and an order for its destruction or disposal through customs, civil or criminal actions is given it can thereafter be considered a waste product. In this respect there are a multitude of international environmental agreements that may become relevant, depending on the type of IP infringing good for destruction (e.g., hazardous or health sensitive – see section V for definition) and on whether the goods may require transportation across borders.

A. INTERNATIONAL ENVIRONMENTAL AGREEMENTS

a) Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and Their Disposal²⁶

49. The Basel Convention aims to protect human health and the environment against adverse effects resulting from the generation, management, transboundary movements and disposal of hazardous and other wastes.

50. Transboundary movements of hazardous and other waste are regulated through the prior informed consent procedure. Shipments made without this consent are illegal unless a special agreement exists.

51. The Convention further obliges its parties to ensure that hazardous and other wastes (listed in annexes) are disposed through a system of environmentally sound management (ESM). Parties are expected to minimize quantities they move across borders by treating and disposing of wastes as close as possible to their place of generation. Strong controls have to be in place from the moment of generation of a hazardous waste to its storage, transport, treatment, re-use, recycling, recovery and final disposal.

52. The Basel Convention has developed a series of technical guidelines on hazardous waste management and, jointly with the Partnership for Action on Computing Equipment (PACE) and the Mobile Phone Partnership Initiative (MPPI), guidelines on ESM and recycling for information

²⁵ See, in more detail, above, paragraphs 17 and 19.

²⁶ Adopted on March 22, 1989, and entered into force on May 5, 1992, 1673 UNTS 57, available at: <https://treaties.un.org/doc/publication/UNTS/Volume%201673/v1673.pdf>.

and communication technology (ICT) equipment which will be relevant for the destruction and disposal of IP infringing electronic goods. There are 14 Basel Convention Regional and Coordinating Centres located around the world.

b) Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade²⁷

53. The Rotterdam Convention aims to protect human health and the environment from specified hazardous chemicals by promoting shared responsibility among parties in international trade. Currently, 24 chemicals used as pesticides, six severely hazardous pesticide formulations and 11 industrial chemicals are subject to the Rotterdam Convention.

c) Stockholm Convention on Persistent Organic Pollutants (POPs)²⁸

54. The Stockholm Convention aims to protect human health and the environment from persistent organic pollutants (POPs) that remain intact in the environment for extended periods. They can bioaccumulate in fatty tissue of humans and wildlife and thus have harmful impacts on human health or the environment. Key elements include the requirement that developed countries take measures to eliminate production and use of intentionally produced POPs, eliminate unintentionally produced POPs where feasible, and manage and dispose of POP wastes in an environmentally safe manner.

d) Bamako Convention on the Ban of the Import into Africa and the Control of Transboundary Movement and Management of Hazardous Wastes Within Africa²⁹

55. The Bamako Convention, currently ratified by 25 African States, is based on the Basel Convention but is more restrictive in prohibiting all imports of hazardous waste. The Convention was concluded in the aftermath of several scandals involving the export of toxic waste to Africa by developed nations.

e) Convention to Ban the Importation into Forum Island Countries of Hazardous and Radioactive Wastes and to Control the Transboundary Movement of Hazardous Wastes Within the South Pacific Region (Waigani Convention)³⁰

56. The Waigani Convention, currently ratified by 13 member States of the Pacific Islands Forum, is based on the Basel Convention, but also includes radioactive wastes.

²⁷ Adopted on September 10, 1998, and amended on September 20 to 24, 2004, October 27 to 31, 2008, June 20 to 24, 2011, April 28 to May 10, 2013, and May 4 to 15, 2015, 2244 UNTS 337, available at: <http://www.pic.int/TheConvention/Overview/TextoftheConvention/tabid/1048/language/en-US/Default.aspx>.

²⁸ Adopted on May 22, 2001, and entered into force on May 17, 2004, 2256 UNTS 119, available at: <http://chm.pops.int/TheConvention/Overview/TextoftheConvention/tabid/2232/Default.aspx>.

²⁹ Adopted in January 1991, and entered into force in 1998, 2101 UNTS 177, available at: <https://www.opcw.org/chemical-weapons-convention/related-international-agreements/toxic-chemicals-and-the-environment/bamako-convention/>.

³⁰ Adopted on September 16, 1995, and entered into force on October 21, 2001, available at: <http://www.sprep.org/attachments/legal/WaiganiConvention.pdf>.

f) Montreal Protocol on Substances that Deplete the Ozone Layer³¹

57. The Montreal Protocol is an international treaty designed to protect the ozone layer by phasing out the production of numerous substances that are responsible for ozone depletion. The Treaty is relevant for seized counterfeit goods such as refrigerants containing ozone depleting substances (ODS)

58. The Montreal Protocol and subsequent amendments have demanded that existing ODS should be recovered, recycled and re-used where possible and that best industrial practice is maintained during the disposal or re-use of ODS. This will likely involve shipping to an appropriate facility for recycling, conversion or destruction.

g) Minamata Convention on Mercury³²

59. The Minamata Convention on Mercury aims to protect human health and the environment from the adverse effects of mercury. As of August 8, 2017, the treaty has been ratified by 73 of the 128 signatories and will come into force and be legally binding for all parties on August 16, 2017.

60. In respect of seized IP infringing goods such as counterfeit medical equipment, or illicit fluorescent and metal halide light bulbs that may contain mercury, appropriate storage and disposal is addressed specifically in Articles 10 and 11 of the Convention. A “Practical Sourcebook on Mercury Waste Storage and Disposal” has been produced by the United Nations Environment Programme in 2016 to assist governments, the industry and the general public³³.

B. NATIONAL ENVIRONMENTAL POLICY AND LEGISLATION

61. A key driver at the national level for environmentally safe destruction of IP infringing goods will be the strength of the existing national environmental policy and legislative framework.

62. Where this is well-developed, legal standards and requirements for environmental compliance and enforcement will be clearly defined, along with relevant policy instruments and principles to control and encourage best environmental performance. In this case, waste management will be more effectively controlled and appropriate infrastructure available to dispose of counterfeit products in an environmentally safe manner.

63. In other countries, where the legal system is not robust or less developed or where other demands such as poverty reduction and economic development take priority over environmental protection, ensuring IP infringing goods are destroyed or disposed of in an environmentally safe manner will be a more challenging task. For example, in the absence of stringent national legislation and lack of adequate enforcement provisions it will be difficult to expect effective technical control over ESM of waste, and in particular hazardous waste. With these limitations, marginally less safe but acceptable waste disposal options for IP infringing

³¹ Adopted on September 16, 1987, and entered into force on January 1, 1989, 1522 UNTS 3, available at: <http://ozone.unep.org/en/handbook-montreal-protocol-substances-deplete-ozone-layer/5>.

³² Adopted on October 10, 2013, available at: <https://treaties.un.org/doc/Treaties/2013/10/20131010%2011-16%20AM/CTC-XXVII-17.pdf>.

³³ Available at: <http://www.unep.org/chemicalsandwaste/global-mercury-partnership/mercury-waste-management/activities-and-projects/practical-sourcebook>.

goods (e.g., encapsulation prior to landfill³⁴) may have to be used and should be evaluated against the risk of improper or non-disposal.

64. In respect of hazardous infringing goods, depending on the size of the seized consignment and the type of hazardous substances contained, it may be more suitable to arrange for the transboundary export of these goods to the place of origin or to a third country with a facility for environmentally sound disposal. Transboundary movements of hazardous and other waste are regulated through the prior informed consent (PIC) procedure under the Basel Convention and require notification (of the importer to the Competent Authority of the State of export); consent to the export and issuance of a movement document; transboundary movement; and subsequent receipt of a confirmation that the waste has been disposed of, as planned, in an environmentally sound manner. The high cost of such actions may, however, preclude this option in the absence of additional financial support.

C. GUIDING ENVIRONMENTAL PRINCIPLES

65. Four environmental principles are widely recognized as core for effective and controlled management of wastes and are thus relevant for the destruction and disposal of IP infringing goods³⁵:

- The “polluter pays principle” implies that all producers of waste are legally and financially responsible for the environmentally safe disposal of the waste they produce. This principle also attempts to assign liability to the party that causes the damage.
- According to the “precautionary principle”, where there are threats of serious or irreversible damage to the environment, lack of full scientific certainty should not be used as a reason for postponing cost-effective measures to prevent environmental degradation.
- The “duty of care principle” stipulates that any person handling or managing hazardous substances, or wastes or related equipment is ethically responsible for using the utmost care.
- The “proximity principle” recommends that treatment and disposal of hazardous waste take place at the closest possible location to its source to minimize the risks involved in its transport. Similarly, every community should be encouraged to recycle or dispose of the wastes it produces, inside its own territorial limits, unless it is unsafe to do so.

³⁴ For a more detailed description of this method, see below paragraph 88.

³⁵ See also Guidance Document on the Preparation of Technical Guidelines for the Environmentally Sound Management of Wastes Subject to the Basel Convention (1994), available at: <http://www.basel.int/Portals/4/Basel%20Convention/docs/meetings/sbc/workdoc/framework.doc>.

V. ENVIRONMENTAL AND PUBLIC HEALTH AND SAFETY CONCERNS WITH THE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

66. Once IP infringing goods are seized and the order for their destruction is given, a decision will be required on what disposal method should be used. This will depend on the specific nature of the good, its chemical or material composition, whether it should be considered hazardous or not, the available local technology and disposal capabilities and the costs for the treatment.

67. For an IP infringing good to be defined as hazardous it would have to be shown to pose a substantial or potential threat to public health or the environment and to exhibit one or more of the following five hazardous characteristics: flammable, explosive, reactive, corrosive or toxic. Hazardous infringing goods would normally require specialist disposal or recycling procedures to ensure they are destroyed or disposed of through an ESM approach. Hazardous IP infringing goods may include counterfeit pesticides, chemicals, lead acid batteries, refrigerants containing ODS and electronic goods.

68. Infringing goods can also include health sensitive products such as tainted foods, counterfeit pharmaceutical medicines and cosmetics, which may not in all cases be considered hazardous in line with the above definition but harmful as a result of their substandard or incorrect active pharmaceutical ingredients (API), unsafe additional ingredients or lack of therapeutic benefits, which can further endanger the person's health or produce an adverse reaction in the patient. In these circumstances the method of disposal needs to not only dispose of the infringing goods in an environmentally safe manner but moreover in a way to ensure the infringing goods will definitively not be able to re-enter the channels of commerce or be utilized by scavengers, as this could result in even more harm.

69. The following section describes pertinent public health, environmental and ethical concerns for a selection of IP infringing goods, including hazardous, non-hazardous and health sensitive products, and briefly describes appropriate methods for their destruction or disposal.

A. COUNTERFEIT PESTICIDES AND AGROCHEMICALS

70. The trade in IP infringing pesticides has proven to be an escalating problem. Their estimated contribution to the global pesticide trade rose from around five per cent in 2007 to about 10 per cent in 2015. Worse case estimates indicate that up to 25 per cent of the global pesticide market may be accounted for by counterfeits³⁶. Many notable large consignments of counterfeit pesticides have been detained during coordinated seizure operations³⁷.

71. Counterfeit pesticides are sold untested and unauthorized and are generally toxic despite their actual composition and active ingredients being unknown at the time of seizure. They often include toxic components very different from the original product, can have far lower

³⁶ United Nations Interregional Crime and Justice Research Institute (UNICRI) (2016), *Illicit Pesticides, Organized Crime and Supply Chain Integrity*, available at: http://www.unicri.it/in_focus/files/The_problem_of_illicit_pesticides_low_res1.pdf.

³⁷ 2017 - seizure in Europe of 122 tonnes of counterfeit or substandard pesticides (operation Silver Axe II; <https://www.europol.europa.eu/newsroom/news/122-tons-of-illegal-or-counterfeit-pesticides-seized-during-operation-silver-axe-ii>); 2013 - seizure in Poland of 21 tonnes of unauthorized and unidentified pesticides without labels (https://ec.europa.eu/anti-fraud/media-corner/press-releases/substantial-quantities-smuggled-counterfeit-pesticides-seized-poland_en); 2012 - seizure in Tanzania of five tonnes of counterfeit Syngenta product (UNICRI (2016), *cit. op.*, 75); and 2006 - seizure in Ukraine of 500 tonnes of counterfeit pesticides (European Crop Protection Association (ECPA) (2008), *Counterfeit Pesticides Across Europe*, p. 8, available at: <http://www.environmentportal.in/files/counter.pdf>).

flashpoints (transport risk) and may also contain illegal or banned POPs such as Dichlorodiphenyltrichloroethane (DDT), Aldrin, or Endrin. This is often not reflected in the labelling with inadequate, incorrect or misleading information both in respect of the active ingredients they contain and how the product should be used. Inadequate containers can also provide an extra hazard for both storage and transport of these goods. Moreover, criminal counterfeiters have learned to send bulk chemicals in unmarked containers and without adequate paperwork and labelling, for mixing them into pesticide formulations at location.

72. Destruction or disposal methods for counterfeit pesticides will generally be the same as those used for licit obsolete pesticides but varies depending on the composition of the pesticides, with high temperature incineration being required in the majority of cases. Prior to disposal, all counterfeit pesticides will require chemical and physical analysis either in the field with specialized equipment or in an accredited, well-equipped quality control laboratory with certified personnel to determine both the toxic active ingredients and the inert ingredients, which can also be toxic. This tends to be an expensive process.

73. Generally, to dispose of organic pesticides in an environmentally safe way (except those containing metals or arsenic), they must be incinerated at temperatures over 1100°C for at least two seconds residence time. Properly managed incineration can result in destruction and removal efficiency of 99.99 per cent or higher. The risk of dioxin and furan formation can be reduced by an incinerator design in which the stack gases cool quickly. However, both the ash and filters may contain some toxic elements and will themselves require careful treatment and disposal usually to a sanitary landfill or further incineration.

74. While developed countries may have specialist incineration facilities able to dispose of counterfeit pesticides, these are usually absent in developing countries. An alternative solution may be the use of cement kilns³⁸.

75. Alternatively, bulk quantities of pesticides can be transported to a country with appropriate incineration facilities such as in Europe, but costs for such operations will be high (e.g., 4000 to 6000 US dollars per tonne) and any operation would have to conform to the export requirements of the Basel Convention (e.g., prior consent forms).

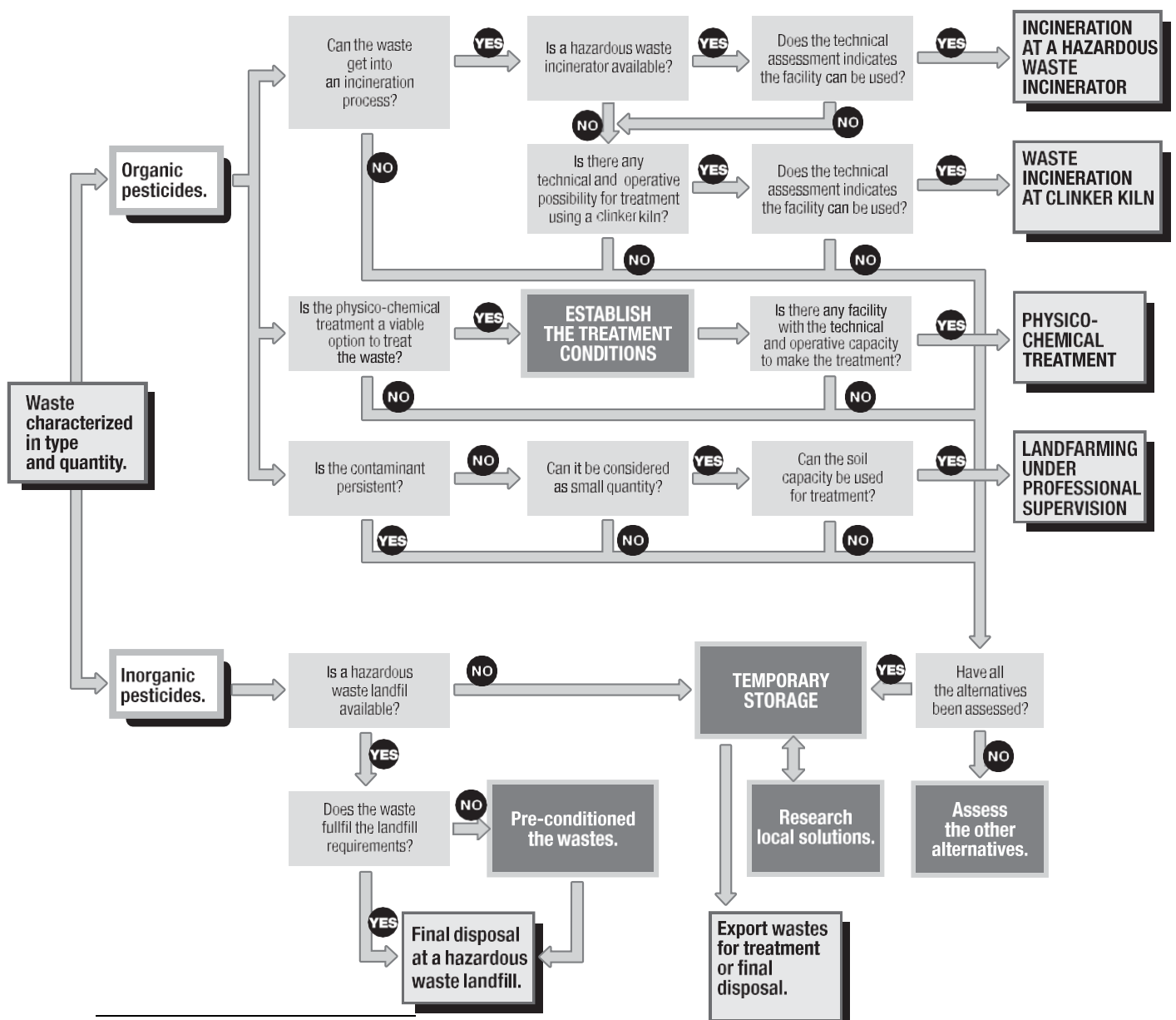
76. Conversely, inorganic pesticides cannot be incinerated and neither can organic pesticides containing mercury or heavy metals. Alternative treatments, such as alkaline hydrolysis, may be suitable for these pesticides but this could only be determined through effective analysis of the illicit pesticides composition. Alternatively, inorganic pesticides could be disposed of in a sanitary hazardous waste landfill. To determine whether a specific chemical ingredient identified through analysis may be incinerated or requires alternative treatment, the relevant material safety data sheet should be consulted to determine the specific hazards, necessary safety precautions and potential environmental impacts resulting from any spillage or incorrect disposal. An assessment chart for treatment options or final disposal for pesticides is provided in Figure 1.

77. For the disposal of small quantities of illicit pesticides or those of low toxicity, alternative disposal options may be suitable. These may include land treatment, composting treatment, photolysis and release to air but this will depend on the type and composition of the product, its quantity, its behavior in the environment and local circumstances. Any alternative method would have to be examined on a case-by-case basis by chemical experts. Disposal through burial, open burning or a sewerage system should never be conducted.

³⁸ For more information see below paragraphs 143 to 146.

78. Once the pesticide has been disposed of, all remaining containers will require cleansing through triple rinsing. Yet despite cleansing these containers will continue to emit residues from the wall of the container and will therefore contaminate any substance placed inside. For this reason, all pesticide containers should be destroyed, disposed of or recycled immediately after cleansing to prevent unauthorized use. This is particularly important in developing countries where containers are a valuable commodity. All containers should at minimum be holed multiple times so they cannot hold liquids and ideally shredded or crushed prior to disposal or recycling.

Figure 1: *Pesticide management. Treatment and/or final disposal alternatives technical assessment*³⁹



³⁹ Taken from Javier Martínez (2004), *Practical Guideline on Environmentally Sound Management of Obsolete Pesticides in the Latin America and Caribbean Countries*, available at: http://archive.basel.int/centers/proj_activ/tctf_projects/013.pdf.

79. More details and guidelines on how to handle, store and dispose of illicit pesticides can be found in guidelines adopted by the Food and Agriculture Organization of the United Nations (FAO)⁴⁰.

B. COUNTERFEIT PHARMACEUTICALS, COSMETICS AND MEDICAL EQUIPMENT

80. Counterfeit pharmaceuticals, whether prescription medicines for illnesses such as cancer and diabetes or “lifestyle drugs” for weight loss or sexual dysfunction, represent a growing threat to patient health and safety.

81. The WHO previously estimated that the prevalence of counterfeit medicines may be no more than one per cent in developed nations, but in low income developing countries counterfeits can account for up to 10 per cent of all medicines⁴¹. In Asia, estimates of up to 30 per cent have been provided for some countries, with this fraudulent trade having an estimated value of more than 5 billion US dollars per annum⁴². The scale of illicit production of counterfeit pharmaceuticals is further illustrated by recent targeted seizure operations⁴³.

82. Counterfeit medicines pose a threat to patients as they are produced outside established regulatory frameworks and often in unsanitary conditions. They usually consist of either the incorrect dosage of the active pharmaceutical ingredient (API) or none at all, and can include other dangerous ingredients such as pesticides (boric acid), leaded highway paint, rat poison, brick dust, plaster and even heavy metals.

83. Counterfeit cosmetics are another area that is escalating rapidly. It is of particular concern due to many of the infringing products containing dangerously high levels of toxic metals such as arsenic, lead, copper, mercury cadmium and zinc alongside paint stripper, nail varnish remover and even urine.

84. The counterfeiting of medical equipment is another growing problem and affected products may include thermometers, manometers, incubators, mercuric oxide batteries, mercury switches, electron microscopes, blood pressure gauges and canter and feeding tubes. They represent a danger to consumers both in respect of their potential for critical failure or

⁴⁰ FAO (1996), *Disposal of Bulk Quantities of Obsolete Pesticides in Developing Countries*, available at: http://www.fao.org/fileadmin/user_upload/obsolete_pesticides/docs/w1604e.pdf.

⁴¹ WHO (2006), *Counterfeit Medicines – An Update on Estimates*, available at <http://www.who.int/medicines/services/counterfeit/impact/TheNewEstimatesCounterfeit.pdf>. It should be noted, however, that opinions diverge as to what is to be understood under the term “counterfeit medicines”. Later, the WHO used the term “substandard/spurious/falsely-labelled/falsified/counterfeit medical products” (see <http://www.who.int/mediacentre/factsheets/fs275/en/>) before WHO member states decided, in January 2017, to henceforth speak of “substandard and falsified” (see <https://www.ip-watch.org/2017/01/30/board-agrees-drop-word-counterfeit-30-years/>). This reflects the decision of WHO Member States to address the topic “from a from a public health perspective, excluding trade and intellectual property considerations” (World Health Assembly Resolution 65.19, available at: http://www.who.int/medicines/services/counterfeit/mechanism/WHA65.19_extract.pdf?ua=1). For a more detailed introduction to current issues in the debate on counterfeit medicines, see WIPO Secretariat (2014), *The Counterfeiting of Medicines: Pharmaceutical Crime and Trademark Infringement*, available at: http://www.wipo.int/export/sites/www/enforcement/en/pdf/wipo_interpol-conf_2014.pdf.

⁴² United Nations Office on Drugs and Crime (2013), *Transnational Organized Crime in East Asia and the Pacific. A Threat Assessment*, p. 129, available at: https://www.unodc.org/documents/data-and-analysis/Studies/TOCTA_EAP_web.pdf.

⁴³ During Operation Biyela 1, conducted in 23 African countries in 2012, a total of 550 million doses of pharmaceutical products were confiscated. During Operation Pangea IX, which targeted the illicit online sale of medicines and medical devices in 2015, 53 million US dollars of counterfeit medicines were seized along with 270,000 illicit medical devices. During Operation ACIM 113 million counterfeit pharmaceutical products were seized in Africa in September 2016. In February 2017, 50 tonnes of counterfeit medicines were seized in Abidjan, Côte d'Ivoire.

sub-standard performance. In addition, many contain toxic products such as mercury, cadmium or silver, which represents a further hazard in terms of breakage and long-term disposal.

85. Methods for the environmentally safe disposal of counterfeit pharmaceuticals will be the same as those for licit expired medicines for which extensively detailed WHO guidelines exist⁴⁴. In addition, however, the selected destruction or disposal methods need to further ensure the counterfeits are definitively removed from the channels of commerce.

86. The best environmental option for the disposal of most counterfeit pharmaceuticals is high temperature incineration with appropriate gas flue treatment to capture toxic gases. There are, however, other options that can be used to achieve adequate disposal, and for those countries that do not possess either a dedicated incineration facility or a suitable cement kiln, alternative, marginally less safe, methods are acceptable when measured against the risk for improper or non-existent disposal.

87. The most widely practiced method for the disposal of waste in developing countries is non-sanitary open landfills that do not protect the environment. Disposal of untreated counterfeit pharmaceuticals at these sites is not recommended except as a last resort. Even then it should only be considered if pharmaceuticals be immobilized through encapsulation or inertization to prevent scavenging and the danger of the goods re-entering the channels of commerce. While it is preferred to use sanitary landfills with features to isolate leachates from contaminating aquifers and local watercourses, encapsulation/inertization prior to disposal is equally beneficial.

88. Encapsulation is an inexpensive treatment that involves the filling of containers with solid or semi-solid pharmaceuticals to 75 per cent of their capacity with the remaining space filled with an aqueous mix of cement, cement/lime mixture or bituminous sand which is then allowed to set. Once the mix is cured, the steel drums can be spot-welded shut or plastic molds removed and re-used. The encapsulated material should then be placed at depth in the base of the landfill and covered over with fresh municipal waste.

89. Inertization is a variant of encapsulation and involves the prior removal of all pharmaceuticals from their packaging including the blister packs; the crushing of the counterfeit medicines using a grinder or road roller; and the mixing of this material with a cement and lime mix mortar to eventually form a homogenous solid which can then be disposed of in landfill.

90. As far as counterfeit cosmetics are concerned, their often high metal content debars them from disposal via incineration. Therefore, crushing or shredding of these goods, followed by encapsulation, is the recommended disposal method for their destruction and disposal.

91. Counterfeit pharmaceuticals and cosmetics should not be destroyed through low temperature open burning⁴⁵. Alternatively, as an interim measure to avoid less safe disposal options, counterfeit pharmaceuticals can be incinerated in medium temperature, two chamber incinerators operating at a minimum temperature of 850°C and with retention times of at least two seconds in the second chamber. For such operations it is recommended that the pharmaceutical waste is diluted with large amounts of municipal waste.

⁴⁴ WHO and others (1999), *Guidelines for Safe Disposal of Unwanted Pharmaceuticals in and After Emergencies* (document WHO/EDM/PAR/99.2), available at: http://apps.who.int/iris/bitstream/10665/42238/1/WHO_EDM_PAR_99.2.pdf, and Yves Chartier and others (2nd edition 2014), *Safe Management of Wastes from Health-care Activities*, available at: http://apps.who.int/iris/bitstream/10665/85349/1/9789241548564_eng.pdf.

⁴⁵ For a more detailed description of the dangers of open burning, see above paragraph 17.

92. IP infringing medical equipment such as thermometers, sphygmomanometers, dry-cell batteries and mercury switches containing toxic metals (e.g., mercury, cadmium) should not be burned or incinerated and should ideally be sent to specialist facilities able to recover heavy metals. If this is not feasible these IP infringing goods would have to go to a disposal or storage site designed for hazardous industrial waste.

C. INFRINGING INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT AND OTHER ELECTRONIC DEVICES

93. With the new technological era ever developing, ICT equipment and other electronic products are fast becoming one of the most commonly encountered counterfeit goods. Televisions, music systems, mobile telephones, personal computers and tablets, household appliances, headphones, games consoles, hair appliances, toys, electronic accessories (e.g., chargers and batteries) are all regularly counterfeited along with electronic components – either copies of original parts or recovered from scrap, recycled and then surreptitiously used in legitimate products and even military equipment⁴⁶. A number of recent major seizures of counterfeit electronic goods confirm this is a global problem⁴⁷.

94. Owing to their often sub-standard quality, counterfeit electronic goods represent a potential hazard to consumers with reports of serious injury through device explosions, unregulated heat burns and even death from their use through electric shock⁴⁸.

95. Moreover, counterfeit electronic products are comprised of many of the same materials as licit electronic goods which can include hazardous toxic substances such as lead, mercury, cadmium, arsenic, beryllium and brominated flame retardants but also valuable materials such as gold, silver, copper, palladium, cobalt, aluminum, lithium and rare earth metals.

96. Considering the materials counterfeit electronic goods contain, their destruction or disposal is seldom straightforward. For example, confiscated goods are usually under the authority of customs or other enforcement agencies and due to their illicit provenance normally must be stored, transported and controlled in secure enforcement facilities and under specific and restrictive protocols up until their final destruction / disposal. When authority for their disposal is given, the first required step is the curtailment of the counterfeits' functionality via breakage or dismantling so as to prevent their re-entry into the channels of commerce. The utmost concern, however, must be given to the way the counterfeit goods are dealt with thereafter so that negative public health and environmental impacts are to be avoided.

97. With any electronic product, be it licit or illicit, the most environmentally safe and beneficial form of disposal is through the process of formal recycling which – when conducted properly – can bring about significant financial dividends. For example, a typical mobile telephone will contain approximately 15 g of copper, 0.034 g of silver, 0.034 g of gold, and 0.015 g of

⁴⁶ Michael Pecht (2013), *The Counterfeit Electronics Problem*, 7 Open Journal of Social Sciences, pp. 12-16, available at: https://file.scirp.org/pdf/JSS_2013121215153599.pdf.

⁴⁷ In Dubai over 12 million phones and accessories were seized in 2016; in Cameroon, more than 1000 counterfeit Samsung televisions were confiscated in 2013; and 1300 counterfeit electronic products with a retail value of 1.3 million US dollars were recently seized from a single consignment in Hong Kong. In New York, police raided two storefronts seizing over 11,000 counterfeit "iPhones" and Samsung devices. Over 50,000 mobile phone accessories were reportedly seized in Brazil in 2017. For India, Kenya and Tanzania, it was estimated in 2016 that more than 20 per cent of all mobile phones were counterfeit.

⁴⁸ International Electrotechnical Commission (IEC) (2014), *Piracy in Electrical and Electronic Products: Anti-counterfeiting Best Practices and Strategies*, available at, http://www.iec.ch/about/brochures/pdf/conformity_assessment/IEC_Counterfeiting_brochure_LR.pdf.

palladium, amounting to a total of 15 tonnes of copper, 34 kg of silver, 34 kg of gold and 15 kg of palladium for every million telephones recycled⁴⁹.

98. Developed countries commonly have licensed recycling facilities in which salvageable materials can be safely extracted. Yet in less developed countries recycling of e-waste is frequently conducted through informal recycling practices that are unregulated, usually informal and sometimes illegal and practiced by people with little personal protection or technology and a lack of awareness of the potential health risks⁵⁰. Generally, this process is only motivated by the recovery of valuable or useful metals. The basic and unprotected methods of this informal recycling sector tend to pose serious consequences for both public health and the environment.

99. Plastics are often openly burned at low temperatures either as a method of disposal or to retrieve metals from electronic chips, electrical wires (e.g., copper) and other components. This can release heavy metals into the environment as well as toxic emissions and residues, often carcinogenic, from the plastics or the fuel for such fires (e.g., rubber tires, polystyrene foam). The de-soldering of circuit boards likewise results in the release of highly toxic lead saturated fumes while the use of solvents, reagents such as cyanide, and acids to remove precious metals in open acid baths can all lead to adverse health and environmental impacts. Furthermore, most of these processes are highly inefficient so that only a fraction of the potential recoverable valuable metals are actually extracted.

100. For these reasons, counterfeit electronic goods should, as far as practicable, not be disposed through informal recycling processes and only sent to formal proven recycling facilities.

101. It is nonetheless recognized that in developing countries and economies in transition, building such recycling capacity is a challenge which requires appropriate regulatory infrastructure and technology that may not be possible to immediately adopt but rather could occur in incremental advances. At minimum, governments, businesses and workers should be better prepared for such recycling operations and their potential risks through capacity-building and training activities.

102. Ultimately, formal e-waste recycling should be guided by an ESM approach to protect workers and ensure a minimal environmental footprint⁵¹. Facilities should have the appropriate equipment and technologies for their specific recycling area so as to optimize value and material recovery. All workers should be adequately trained for their specific work stream in order to act effectively and safely. In this regard, a range of guidelines for the recycling of computer equipment, telephones and other electronic equipment have been developed by Partnership for Action on Computing Equipment (PACE) and the Mobile Phone Partnership Initiative (MPPI), both global partnerships established by the Conference of the Parties of the Basel Convention, and should be consulted for specific information and guidance on best practices⁵².

103. In summary, formal recycling for counterfeit electronic goods will likely include the following stages:

⁴⁹ <http://www.bbc.com/future/story/20161017-your-old-phone-is-full-of-precious-metals>.

⁵⁰ Devin N. Perkins and others (2014), *E-Waste: A Global Hazard*, 80 *Annals of Global Health*, pp. 286-295.

⁵¹ Partnership for Action on Computing Equipment (2013), *Revised Guideline on Environmentally Sound Material Recovery and Recycling of End-of-life Computing Equipment*, available at: <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW.11-INF-13-Rev.1.English.pdf>.

⁵² *Ibid.* and MPPI (2012), *Guidance Document on the Environmentally Sound Management of Used and End-of-life Mobile Phones*, available at: <http://www.basel.int/Portals/4/download.aspx?d=UNEP-CHW-EWASTE-GUID-PUB-MobilePhones-201302.English.pdf>.

- dismantling – the breakdown, by hand, of the counterfeit good to prevent its functionality followed by the separation of the components based on their type and nature (e.g., hazardous);
- separation – sorting dismantled materials into separate batches and consolidating them for specialized material recovery either at the facility or other facilities specialized for the task (e.g., batteries, mercury containing equipment); and
- recovery – involves taking the separated batches of materials into a more specialized process or into a series of them. For example, this may include copper recovery with remaining plastics being shredded or granulated or other materials such as glass, steel, or aluminum being recovered and any residues being further refined for other metals. It may also involve high temperature methods such as smelting and other pyro-metallurgical processes as well as the use of strong chemicals (such as acids and cyanides) for hydro-metallurgical processes.

104. One positive example of a facility specifically developed to deal with IP infringing goods (including electronic products) is the destruction and recycling facility of Demantage Werkplaats Zeeland (DWZ) in the Netherlands. Operated as a partnership between the REACT Anti-counterfeiting Network and Emergis, a Dutch psychiatric organization, this facility handles the destruction of all counterfeit goods seized in the Netherlands and further receives IP infringing products from Belgium and Germany. An average annual weight of 600 tonnes of counterfeit goods are securely transported to the facility where they are registered in individual batches, fully tracked and processed with approximately 98 per cent of the raw materials being sold to the recycling industry. The facilities are a designated customs controlled area and certified to the International Organization for Standardization's 9001 and 14001 standards and the Occupational Health and Safety Assessment Series (OHSAS) 18001 standard. The majority of the dismantling work is conducted by patients identified and provided by Emergis and organized in a socially responsible and controlled manner within a stable and safe environment contributing to the patients' rehabilitation and wellbeing.

105. The International Telecommunication Union (ITU), acting on its role as an international standards developing organization, has formulated several key standards to deal with the growing issue of e-waste. Developed by Study Group 5 on Environment, Climate Change and Circular Economy within ITU's Telecommunication Standardization Sector (ITU-T), 11 key ITU-T Recommendations and Supplements (international standards) present e-waste management strategies and guidelines. National governments can use them to weed out counterfeit electronic products, minimize the e-waste burden, prevent health disorders (associated with pollution caused by improper e-waste recycling and dumping), reduce the carbon footprint, set the basis for legalizing credible ICT production cycles and lay down the procedures for extracting rare metals from end-of-life electronics devices.

106. The ITU-T Recommendations aim to reroute end-of-life equipment into feasible recycling chains and prevent them ending up in landfills or being transported to developing countries where they enter the illegal recycling market. This is achieved by providing defined and environmentally-friendly processes for e-waste collection, storage, re-use and recycling. To assist developing countries implement their e-waste legislations and protect their workforce involved in e-waste recycling, these standards outline minimum requirements for the safe and environmentally sound handling of e-waste and set out principles to maximize re-use. While most countries have laws to regulate waste recycling and ensure occupational health and safety, the ITU-T Recommendations complement the existing legislations and build on existing

sustainability requirements and ensure that international obligations are met in terms of ESM of hazardous wastes and pollutants⁵³.

D. COUNTERFEIT CLOTHING, HANDBAGS AND FOOTWEAR

107. Counterfeit clothing handbags and footwear account for the largest proportion of IP infringing goods. Luxury as well sporting and casual brands are extensively copied. Counterfeit sports shirts, mainly for football, are also a major problem, with estimates of up to 20 per cent of football kits accounted for by illicit copies and specific sporting events such as the World and European cups and the Super Bowl being particularly targeted. A number of notable seizures have occurred globally⁵⁴.

108. Counterfeit clothing and footwear, while perhaps successful in replicating the design and trademarks of well-known brands, are often of inferior quality and through the lack of safety regulation in their production may consist of dangerous materials or chemicals that could harm consumers. For example, dyes used to color fabrics have been shown to be carcinogenic and banned for licit commercial production while some fabrics may not be treated to reduce their flammability and therefore represent a risk to the wearers, which may be children⁵⁵. Furthermore, in most cases, counterfeit clothing and footwear are produced under unethical and poor working conditions, often using child labor.

109. As with all counterfeit goods, the primary aim of seizure procedures is to remove counterfeit clothing and footwear from channels of commerce and ultimately destroy. This is generally achieved through shredding, grinding or cutting of the items followed by later disposal through incineration or placement in landfill.

110. As a potential alternative, the environmental footprint and costs could be reduced if counterfeit clothing and footwear could be disposed of by way of donations for humanitarian use.

111. In the United Kingdom (UK), the His Church Foundation has managed to convince 90 per cent of British Trading Standards Authorities and the UK Federation against Copyright Theft (FACT) that rather than destroy counterfeit clothing and footwear, they should alternatively allow these goods to be de-branded through the removal of their trademarks and labels, and thereafter be rebadged under the "HIS" label and permitted for donation as humanitarian aid. The organization has been conducting this task since 2010 and has passed on these goods to over 250 homeless charities and shelters where they are distributed⁵⁶.

⁵³ For the Latin American region, see Basel Convention Secretariat, Basel Convention Regional Centre (BCRC) for South America, Economic Commission for Latin America and the Caribbean (ECLAC), ITU, UNESCO, UNIDO, United Nations University (UNU), WIPO and WHO (2016), *Sustainable Management of Waste Electrical and Electronic Equipment in Latin America*, p. 33, available at: http://wftp3.itu.int/pub/epub_shared/TSB/2016-Integrated-mngnt/index.html.

⁵⁴ In 2006, German customs seized a total of 117 containers loaded with 945,384 pairs of counterfeit Nike and 105,000 Adidas and Puma shoes; in the US, in 2010, over 4,338 seizures confiscating counterfeit athletic and sports apparel worth approximately 18.7 million US dollars were carried out, while in 2012, customs confiscated a single shipment of 20,000 pairs of fake Christian Louboutin shoes worth an estimated 18 million US dollars. In 2014, over 27 million US dollars' worth of counterfeit handbags from brands such as Hermes, Louis Vuitton, Gucci, Prada and Burberry were seized in the Philippines.

⁵⁵ This concern was highlighted by counterfeit Disney dresses for the film *Frozen* which were shown to burn quickly and intensively if brushed against a candle; see <http://www.cantechletter.com/2016/02/socially-unfashionable-counterfeit-clothing-and-accessories/>.

⁵⁶ <http://www.bbc.com/news/uk-16058275>.

112. In October 2010, the Genoa Court of Appeal ordered that 7000 pairs of shoes, after removal of their counterfeit trademarks and following rebranding, could be donated to Caritas⁵⁷, while in the Republic of Korea, students were invited to draw designs on thousands of pairs of confiscated converse footwear so they could be donated⁵⁸. Similarly, the Government of the Philippines, after the super typhoon Haiyan (Yolanda) disaster in 2013, released seized counterfeit clothes and footwear to those in need.

113. Such actions may be considered positive in the sense of being environmentally and socially responsible while removing both the logistical challenges and costs of extended storage during prolonged judicial deliberation. Prior to such actions being taken, however, the full agreement of right holders needs to be obtained. Many right holders do not currently support the donation of their goods due to potential problematic consequences in respect of liability issues and negative impacts on brand image⁵⁹. For example, counterfeit goods are not assured to be without health and safety risks, and factors such as the responsibility for 'duty of care' and liability issues come into play.

114. Similarly, right holders, after spending millions on advertising, are understandably sensitive to their brand image being degraded with low quality replicas on the streets, regardless of whether it helps the less fortunate. The additional potential for their brands to begin to be considered "shelter chic" was another factor considered to potentially further undermine their brand image⁶⁰.

115. Furthermore, if donations do not ensure counterfeit goods will not re-enter channels of commerce, this negates the efforts made against counterfeiting in the first place.

VI. MAIN CHALLENGES IMPACTING THE ENVIRONMENTALLY SAFE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

A. STORAGE CAPACITY

116. As seized goods must be prevented from re-entering the channels of commerce, they are usually stored in designated secure customs or private bonded warehouses. Storage capacity can become a limiting factor, especially when large seizures of infringing goods take place, and may be particularly relevant in remote custom border check-points which often have little to no storage facilities. Allied to this is the often protracted timeframe within which seized counterfeit goods must be stored while litigation procedures are conducted, which can markedly increase the final costs of such storage.

⁵⁷ Olivier Vrins (2011), *Counterfeiting Perspectives: Are donations of counterfeit goods to charities socially acceptable?*, World Trademark Review, June/July 2011, p. 99, available at: <http://www.worldtrademarkreview.com/Magazine/Issue/31/Columns/Are-donations-of-counterfeit-goods-to-charities-socially-acceptable>. As to the situation in Italy, see also Davide Tanzarella (2017), *Environmentally Safe Disposal of Intellectual Property Infringing Products: The Experience of the Italian Customs Administration*, paragraphs 15 to 17, in *National Experiences with the Environmentally Safe Disposal of Intellectual Property Infringing Goods* (document WIPO/ACE/12/4), pp. 3-7, available at: http://www.wipo.int/meetings/en/doc_details.jsp?doc_id=376236.

⁵⁸ Lee Sang-Hyup (2012), *Disposal of Counterfeit Goods – Asia Pacific Regional Customs Perspectives*, WIPO-United Nations Environment Programme Regional Workshop on the Disposal of Counterfeit Goods for the Judiciary, Law Enforcement Officials and Environmental Officers, Bangkok, July 3 and 4, 2012. program available at: http://www.wipo.int/export/sites/www/enforcement/en/activities/pdf/program_bangkok.pdf.

⁵⁹ Kristina Rae Montanaro (2009), *"Shelter Chic": Can the U.S. Government Make it Work?*, 42 Vanderbilt Journal of Transnational Law, p. 1666, available at: <https://www.vanderbilt.edu/wp-content/uploads/sites78/Montanarofinal-cr.pdf>.

⁶⁰ *Ibid.*

117. A further challenge concerns the safe storage of hazardous IP infringing goods, such as pesticides and chemicals, whose true composition is often unknown. These goods need to be appropriately segregated as incompatibility with other chemicals could otherwise, in a worst-case scenario, result in fire, explosion or release of toxic fumes. This may be exacerbated in hot tropical climates, especially in poorly ventilated warehouses not suited for hazardous waste storage, where dangerous fume build-up could occur, especially if the containers the chemicals are stored in are not suitable or damaged. Furthermore, as customs warehouses rarely include areas specifically assigned for hazardous materials appropriate secondary containment and emergency equipment is often lacking. This could mean that any leakages of hazardous chemicals may spread without control, thus further increasing potential fire risk, exposure to toxic hazards and environmental impacts.

B. INAPPROPRIATE DISPOSAL METHODS AND THE LACK OF COMPETENT WASTE DISPOSAL OR RECYCLING FACILITIES

118. Inappropriate destruction or disposal of IP infringing goods can result from a lack of technical capacity and knowledge of waste management, poor environmental awareness, limited disposal or recycling infrastructure, weak or un-enforced legislation, poor inter-governmental engagement or a lack of financial resources. While these factors are generally more prevalent in developing nations and economies in transition, they may also occur in developed regions.

119. For many IP infringing goods, especially hazardous materials, incineration is often the most suitable disposal method. For this purpose, specialized incineration facilities or “waste to energy” plants are generally available in developed countries, as well as phytosanitary and environmental departments able to analyze the composition of suspected hazardous IP infringing goods. In developing countries, however, such facilities are often non-existent or limited (e.g., cement plants) and thus may result in less adequate disposal methods being utilized.

120. Open burning is by far the most inappropriate disposal method for IP infringing goods⁶¹ and disposal of IP infringing goods to open and non-sanitary landfills is also problematic.⁶² To avoid the associated risks, infringing goods should be crushed, shredded, or physically broken with sledgehammers, and ideally encapsulated as concrete blocks prior to landfill disposal.

C. TECHNICAL CAPACITY AND AWARENESS

121. The destruction of IP infringing goods is authorized, overseen and conducted by multiple IP enforcement authorities (police, customs, prosecutors); regulatory bodies on matters such as environment, phytosanitary and health; right holders; and private contractors. There is a significant danger that this large variety of actors will be unable to coordinate or cooperate well, leading to a disorganized destruction / disposal process.

122. Furthermore, considering the wide array of seized infringing goods and their often unknown or dubious composition, coupled with the large “toolbox of methods” available for their destruction / disposal, it is not guaranteed that the parties finally responsible for directing disposal activities will have the appropriate technical knowledge, environmental awareness or

⁶¹ See in more detail, above paragraph 17.

⁶² See in more detail, above paragraph 19.

even commitment to ensure that the infringing goods are handled and disposed of in the most suitable way.

123. Similarly, useful cooperation between IP enforcement agencies and environmental or other regulatory authorities may be limited with the result that guidance on appropriate waste management practice may not be effectively transferred, key issues not adequately identified or addressed, and regulatory compliance not achieved or adhered to.

124. Previous actions such as the recent WIPO/United Nations Environment Programme collaborative regional workshops in the Asia and Pacific region brought together various players involved with counterfeiting and enabled discussions on national and regional issues related to IP enforcement. Together with the past but now defunct Green Customs Initiative of the United Nations Environment Programme and collaborating partners, these initiatives went some way to address issues relating to the capacity for cooperation and coordination in connection with the environmentally safe disposal of IP infringing goods. Nonetheless, if adequate capacity improvements are to be achieved more efforts will be required.

125. While organizations such as INTERPOL and WCO specifically train enforcement authorities in enforcement procedures and the facilitation of seizure operations, training materials do not yet seem to provide adequate guidance on the topic of environmentally safe storage and destruction / disposal of hazardous or potentially hazardous items including IP infringing goods. This is an area that could be developed with a view to improving environmental awareness of this issue within IP enforcement agencies.

126. WIPO's training materials for law enforcement authorities and prosecutors similarly highlight that environmental risks should be mitigated throughout the storage and disposal of IP infringing goods, and further mention the potential for recycling and humanitarian considerations. However, these materials could be developed in further detail so as to improve environmental knowledge and understanding as to how destruction and disposal aspects could be better conducted and improved.

127. Another limiting factor is the lack, in the majority of countries, of specific monitoring or quantifiable statistics on the destruction of seized IP infringing goods. Information on current disposal practices and their environmental and social impacts across regions and nations cannot be known or compared. The development of such a system would thus further enable a more focused capacity-building effort and facilitate the networking of information on positive and innovative actions to improve the environmentally safe destruction of IP infringing goods.

D. COST IMPLICATIONS OF EFFECTIVE STORAGE AND DESTRUCTION/DISPOSAL

128. One of the main concerns of both right holders and governments are the often high costs involved in the storage and destruction of IP infringing goods. Storage charges can rapidly accumulate after goods are seized, especially if litigation proceedings are protracted. Similarly, for some IP infringing goods, such as hazardous pesticides or chemicals, the cost of destruction can be extremely high due to the specialized way in which they must be destroyed (e.g., high heat incineration) and in some circumstances this has been shown to be more expensive than the cost to produce such goods.⁶³ Consequently, this has led to a number of companies requesting that enforcement officers stop seizing products that infringe their trademark, with the offending products thereafter being released back into the channels of commerce.

⁶³ Europol and EUIPO (2015), *Situation Report on Counterfeiting in the European Union*, available at: <https://www.europol.europa.eu/publications-documents/2015-situation-report-counterfeiting-in-european-union>.

129. Who is responsible for paying the costs also varies from one country to another. While in developed countries the government often covers the costs of storage and sometimes destruction in criminal cases, for civil or custom procedures it is usually the right holders who have to pay for both storage and destruction of the seized goods. Moreover, in countries where there is little or no budget for storage and destruction of IP infringing goods, the right holders are usually requested to pay the costs. Article 45 of the TRIPS Agreement obliges WTO members to make it possible for right holders to be awarded damages and expenses to be covered by the infringer. Nonetheless, a high proportion of claims for cost reimbursement against infringers fail as the importer either disappears or the importing company is immediately liquidated after proceedings are initiated, ultimately leaving the bill to be paid by right holders.

130. In contrast, in the United States of America all storage and destruction costs for IP infringing goods are paid for by the Treasury Forfeiture Fund (TFF), with funds derived from the forfeited assets of criminal enterprises⁶⁴. This mechanism both relieves right holders of the burden of storage and destruction costs and further ensures criminal assets are recovered at every opportunity for such purposes.

E. TRANS-BOUNDARY TRANSPORTATION TO APPROPRIATE DISPOSAL FACILITIES

131. Where large consignments of IP infringing goods are deemed hazardous (e.g., chemicals, pesticides, ODSs) yet there are no facilities or methods available to safely destroy or dispose of the goods within the country of seizure, trans-boundary shipment of the goods to a country that has such facilities may be an option to follow.

132. If these goods are in adequate and secure packaging they could, in theory, be sent as a consignment directly to the country where the receiving facilities are located. However, if at this stage the infringing goods are considered a “waste” product any shipment would have to be arranged in line with the Basel Convention and with the appropriate prior informed consent procedure followed.

133. The costs for such a shipment combined with the costs of destruction are likely to be extremely high and may in themselves negate this option until further financial support could be arranged either with a donor government or through private sector aid.

VII. OPPORTUNITIES TO IMPROVE THE ENVIRONMENTALLY SAFE STORAGE, DESTRUCTION AND DISPOSAL OF IP INFRINGING GOODS

134. In order to address the challenges various efforts are required. The following paragraphs identify opportunities to improve the environmentally safe storage, destruction and disposal of IP infringing goods.

A. TRAINING AND CAPACITY BUILDING

135. To facilitate improved technical capacity and environmental awareness of the various parties responsible for the environmentally safe storage, recycling or destruction / disposal of

⁶⁴ Peter Fowler (2013), *Storage and Disposal of Forfeited Infringing Goods: The U.S. Experience*, WIPO-UN ESCAP-United Nations Environment Programme Regional Workshop on the Environmentally Safe Disposal of Intellectual Property Infringing Goods, Bangkok, Thailand, November 21 and 22, 2013, available at: http://www.unescap.org/sites/default/files/infringing-goods-peter_0.pdf.

IP infringing goods further focused capacity-building and environmental awareness-raising initiatives could be organized and training materials developed. This would be particularly helpful with the issue of hazardous and health sensitive IP infringing goods and, specifically, to strengthen knowledge of how best to handle, store appropriately and eventually destroy these potentially harmful products.

136. Such initiatives could be organized under the WIPO capacity-building activities for building respect for IP and conducted in collaboration with various organizations or programs involved in enforcement training (e.g., the WCO's Customs Learning and Knowledge Community (CLiKC) and INTERPOL's International IP Crime Investigators College), environmental matters and hazardous waste management (e.g., the Regional Enforcement Networks (REN) of the United Nations Environment Programme and the Basel Convention Regional and Coordinating Centres) and those related to specific thematic areas relevant to counterfeit products such as pesticides and agrochemicals (e.g., the European Crop Protection Agency and FAO) and pharmaceuticals (e.g., the WHO). In addition, key stakeholders of the private sector could contribute their expertise.

137. In the framework of such collaborative capacity-building materials, specific training materials dedicated to the environmental impact of IP crime, in particular around the topic of destruction and disposal of IP infringing goods could be created. These materials could cover:

- definition and types of hazardous IP infringing goods;
- definition and types of health sensitive IP infringing goods;
- appropriate storage and segregation of hazardous IP infringing goods;
- laboratory analysis of hazardous IP infringing goods;
- description of available options for recycling, destruction / disposal of IP infringing goods;
- destruction / disposal hierarchy of IP infringing goods;
- disposal methods for showcase events;
- alternative disposal options and recycling methods for IP infringing goods;
- standard operating procedures for destruction / disposal of IP infringing goods;
- monitoring, data keeping and reporting on the storage and destruction / disposal of IP infringing goods; and
- national and local coordination for environmentally sound storage and destruction / disposal of IP infringing goods.

B. PUBLIC AWARENESS AND EDUCATION

138. It is clearly evident that showcase events following seizure operations are effective to raise awareness of the wider community, politicians and the private sector on the economic impacts of counterfeiting and piracy and the potential dangers they pose to public health and the environment. Moreover, through publicizing these destruction events via television and print media and reinforcing information through the provision of statistics and facts on the scale of the counterfeit trade (e.g., brochures, posters and other media materials) they can be both far reaching and integral to informing and shaping public opinion.

139. Nonetheless, it is important to recognize that the destruction method used in such events needs to be appropriate and well planned so as to not result in negative environmental and public health impacts. For example, open burning is only acceptable when solely burning the cardboard outer packaging and not the goods themselves or any plastic containers. More appropriate are showcase events that crush the infringing goods using plant machinery or utilize shredders with the remaining material incinerated or taken to landfill after encapsulation, if

deemed necessary. Even better would be to organize suitable infringing goods to be destroyed directly through incineration.

140. Furthermore, if the overall message communicates well that the destruction method was selected to minimize impacts to both the environment and public health, the awareness gleaned from the event will be stronger and have a more positive impact.

141. Hazardous goods, however, should not be disposed of through showcase events due to the potential risk of harm both to the environment and the people attending the event.

142. In respect of public awareness materials to educate on the impacts of IP infringing goods, they should include details of the direct environmental and public health threats that these products may pose but also convey the critical importance for these goods to be appropriately destroyed or disposed of in an environmentally safe manner and how both these aspects are significant to the achievement of the SDGs.

C. IDENTIFICATION OF SUBSTANCE SPECIFIC STORAGE, RECYCLING AND DISPOSAL OPTIONS

143. The potential for alternative disposal options for IP infringing goods also needs to be identified for each location and disseminated. Specialized incineration facilities are often limited in developing countries but alternative solutions such as the use of cement kilns or other industrial furnaces for destruction of hazardous IP infringing goods may be viable. Several studies have, for example, been conducted on the use of cement kilns for in-country incineration of specific hazardous goods such as organic counterfeit pesticides or ODSs such as counterfeit refrigerants which require specialized high temperature treatment for environmentally safe disposal. Although most cement kilns may not be suitable, there is normally at least one cement kiln that could be used for this purpose. Successful trials for this method have been conducted in China⁶⁵, Pakistan⁶⁶, Vietnam⁶⁷ and Tanzania⁶⁸. One further advantage with using a cement kiln is that the alkaline lime product used in the process of forming cement prevents acid gas formation. However, the quality of the cement product may be affected by the introduction of the pesticide and for this reason quality control testing should be conducted in the preliminary stages of the operation.

144. Efforts should therefore be made to contact such facilities and discuss the potential for their use to dispose of hazardous IP infringing goods suitable for incineration. In order to conduct incineration, however, a delivery system for the products to be destroyed to be sent into the kiln would be required and should be designed in collaboration with the kiln operator to ensure its function. Studies have estimated this would cost in the region of 150,000 US dollars⁶⁹. Considering that the alternative solution may require transboundary export of these

⁶⁵ Yeging Li and others (2012), *Disposal of Obsolete Pesticides Including DDT in a Chinese Cement Plant as Blueprint for Future Environmentally Sound Co-processing of Hazardous Waste Including POPS in the Cement Industry*, 16 *Procedia Environmental Sciences*, pp. 624-627.

⁶⁶ Kåre Helge Karstensen and others (2006), *Environmentally Sound Destruction of Obsolete Pesticides in Developing Countries Using Cement Kilns*, 9 *Environmental Science & Policy*, pp. 577-586.

⁶⁷ Food and Agriculture Organization of the United Nations (FAO) (1997), *Prevention and Disposal of Obsolete and Unwanted Pesticides Stocks in Africa and the Near East*, FAO Pesticide Disposal Series 5, available at: http://www.fao.org/fileadmin/user_upload/obsolete_pesticides/docs/consult_2_e.pdf.

⁶⁸ Kåre Helge Karstensen (2005), *The Potential for using Cement Kiln for Environmentally Sound Destruction of Obsolete Pesticides in Developing Countries*, available at: http://www.coprochem.org/documents/19potential_cement_kilns_in_developing_countries.pdf.

⁶⁹ FAO (1997), *Prevention and Disposal of Obsolete and Unwanted Stocks in Africa and the Near East*, available at: http://www.fao.org/fileadmin/user_upload/obsolete_pesticides/docs/consult_2_e.pdf.

products to a country that could safely conduct disposal at very high costs and administrative burden, the expense of the delivery system may be a more suitable option.

145. In addition, there may be benefits that can be accrued by the kiln operator, for example through a payment system for such use. Moreover, incinerated IP infringing products may, through their energy input, help reduce the fuel required for the incineration process and thus save operator costs.

146. The treatment of hazardous or health sensitive IP infringing goods by first shredding or crushing followed by encapsulation is an effective method for disposal yet is under-utilized and should be promoted for its benefit of preventing leaching and the scavenging of any materials after disposal to landfill.

147. In respect of other IP infringing goods, a review of locally available storage and disposal options should be conducted for each type of goods to ensure the most acceptable option is selected.

148. Recycling, if managed properly, can reduce the environmental footprint of seized IP infringing goods through the diversion of waste, may create employment opportunities for communities, help return valuable materials for re-use and further provide an economic return. It is, however, imperative that right holders concur and support this approach and that the recycling is guided by ESM based on acceptable risk thresholds and conducted through the use of certified companies using formal systems and proven technologies and equipment and providing adequate worker safety.

149. While regulatory frameworks in nations with more institutional and technological capacities will ensure adequate compliance with the above principles this is more difficult to achieve in other nations where informal systems are more prevalent. Nonetheless, with focused attention and promotion of the recycling guidelines under the Basel Convention (e.g., PACE, MPPI)⁷⁰ and waste management guidelines from the United Nations Environment Programme⁷¹ incremental advances can be achieved to both educate and raise awareness on the potential environmental and public health risks and the introduction of safer and more efficient methods for recycling activities. These efforts could be conducted in collaboration with relevant international agencies (e.g., the United Nations Environment Programme) and be particularly aimed at small entrepreneurial businesses with the motivation to build partnerships with both enforcement authorities (e.g., customs) and right holders in their region. If circumstances allow, there may be scope, at least in some countries or regions, for a recycling initiative to be developed based on the model used by the REACT anti-counterfeiting network (see paragraph 0), which further provides specific social benefits to people with special needs and/or the socially disadvantaged.

150. Furthermore, as right holders develop effective and often innovative techniques for improved recycling and waste disposal as part of their extended producer responsibility schemes, it would be beneficial if such knowledge, techniques and lessons learned could be transferred to the relevant parties involved with the storage and destruction of IP infringing goods so as to better guide these activities.

151. Examples of beneficial and innovative recycling of IP infringing products include:

⁷⁰ <http://www.basel.int/Implementation/TechnicalMatters/DevelopmentofTechnicalGuidelines/AdoptedTechnicalGuidelines/tabid/2376/Default.aspx>.

⁷¹ United Nations Environment Programme (2013), *Guidelines for National Waste Management Strategies*, available at https://wedocs.unep.org/bitstream/handle/20.500.11822/8669/-Guidelines%20for%20national%20waste%20management%20strategies_%20moving%20from%20challenges%20to%20opportunities-2013UNEP%20NWMS%20English.pdf.

- In the Philippines, infringing CDs / DVDs were recycled after granulation for roofing materials, wall and floor tiles, injection molding products such as transformer caps and substrates for printed circuit boards. In other locations, these materials have been used to develop house and garden furniture⁷².
- In Europe, shredded soles of counterfeit sports shoes have been used for the flooring of children's playgrounds and sport venues⁷³.
- In South Africa, seized counterfeit tobacco was shredded and then used as a fertilizer for land rehabilitation and was further mixed with soil and used to manufacture construction bricks blocks⁷⁴.

D. HUMANITARIAN DONATION

152. While considered positive for its social benefits and reduced environmental footprint, humanitarian donation of counterfeit clothes and shoes needs to be better understood by right holders, who need to be fully in agreement prior to such actions being taken. In this study, the majority of right holders indicated that they currently did not support donation of their goods as a result of concerns about liability, especially where potentially harmful materials were used in the production of the counterfeits, uncertainty as to how such actions may affect their brand image and the risk of the products re-entering the marketplace, which would negate all the right holders' anti-counterfeiting efforts and expenditures. While these concerns are certainly valid, the impacts of natural disasters on local communities are also relevant. Therefore, efforts should be made to bridge perceived interest gaps so that it becomes more acceptable for right holders to agree to donations. It would be easier for enforcement agencies if right holders clearly indicated their policy in respect of humanitarian donations and what mechanisms or expectations they would want to see if such actions were to be supported. Appropriate mechanisms should be found that guarantee that the donated goods do not cause harm to those to whom they are donated. In addition, such mechanisms should decrease the risks for right holders.

153. Perhaps a global or regional standard for the relabeling or rebranding of counterfeit items could be determined, combined with appropriate testing to ensure donated articles meet both health and safety standards. This may satisfy right holder concerns, at least for certain products. Furthermore, the receiving charities would need to enter into specific agreements that clearly outline the responsibilities and conditions for how donated goods will be handled and distributed and how they are prevented from re-entering the channels of commerce. With such arrangements in place both governments and right holders may be more receptive to humanitarian donations for disaster events. Moreover, through such charitable actions right holders could benefit by enhancing their corporate social responsibility image – something which is ever more important for community respect and access to global markets.

⁷² Ricardo R. Blancaflor, *Disposal of Pirated and Counterfeit Goods – The Philippine Experience*, WIPO-UN ESCAP-UNEP Regional Workshop on the Environmentally Safe Disposal of Intellectual Property Infringing Goods, Bangkok, Thailand, November 21 and 22, 2013, available at: <http://www.unescap.org/resources/topic-10-disposal-pirated-and-counterfeit-goods-philippine-experience>.

⁷³ David Blakemore (2010), *op. cit.*, paragraph 98.

⁷⁴ Francois Greyling, *Tobacco Information Workshops & Disposal of Seized Goods*, Anti-illicit Trade Conference, November 10, 2015, South Africa, available at: http://www.tobaccosa.co.za/wp-content/uploads/AIT_Conference_2015-Tobacco_Info_Workshops_and_Disposal_of_Seized_Goods.pdf.

E. PHYSICAL AND FINANCIAL RESOURCES

154. Taking the lead of the TFF mechanism used in the United States of America, there may be scope for other regions or countries to develop similar legislative mechanisms wherein confiscated proceeds of crime, and specifically those relating to counterfeiting, could provide funding support for national enforcement activities in relation to IP infringing goods. Such measures would also send a clear message to criminal organizations involved with counterfeiting and piracy that seizure of assets and property will follow once an IP crime has been proven.

155. It may also be useful to revisit the proposal to oblige the alleged infringer, at the earliest stage of proceedings, to pay a financial warranty based on *prima facie* evidence of infringement to cover storage and destruction costs⁷⁵.

156. Certain measures to reduce protracted timeframes of litigation, and thus the costs for storage, have been proposed in an earlier study⁷⁶.

F. MONITORING AND DATA GATHERING

157. Additionally, practices relating to the environmentally safe destruction and disposal of IP infringing goods could be improved through the development of a monitoring and information platform, either as a standalone mechanism or, more ideally, integrated with current data gathering initiatives operated by WCO, the EUIPO and national governments and addressing the volumes and types of IP infringing goods seized worldwide. Specifically, the system should gather information on the nature of the IP infringing goods (e.g., whether hazardous, health sensitive or not); how the goods will be stored; the method used for either destruction, disposal or recycling; what entities are responsible for this task (e.g., enforcement authorities, right holders), what level of costs were incurred for both storage and the destruction process and what, if any, administrative, social or environmental issues were encountered. This platform should also further provide information exchange, support and feedback with respect to appropriate destruction or disposal options available for IP infringing products, any significant technological or innovative advances that are relevant, and any lessons learned or training that would help improve technical expertise and environmental awareness while minimizing both environmental and public health impacts and risks.

VIII. CONCLUSION

158. There is a need to recognize that IP infringing goods seized and authorized for destruction or disposal not only represent a major waste item that must be dealt with in its own right but also pose additional problems over conventional waste due to their often sub-standard quality and/or dubious/unknown composition. This is notwithstanding the direct need that such goods must be definitively removed from the channels of commerce. Furthermore, as IP infringing goods are illicitly produced and trafficked by criminal enterprises, there is often an understandable reluctance with regard to responsibility or accountability for these goods considering the significant financial burden such goods present for both enforcement agencies (e.g., funded by taxpayers) and right holders, where both parties may actually be considered the victims of this

⁷⁵ European Observatory on Counterfeiting and Piracy (2010), *Corrective Measures in Intellectual Property Rights*, available at: http://ec.europa.eu/internal_market/iprenforcement/docs/corrective_measures_en.pdf.

⁷⁶ David Blakemore (2010), *op. cit.*, paragraph 98.

illicit trade. Nonetheless, if the environmentally safe storage, destruction and disposal of such goods is to be achieved, more attention is urgently required on building capacity, both

administrative and technical, and improving the procedures, monitoring and support of these activities, especially in developing countries. This is only likely to occur with more collaborative and committed engagement amongst all the affected parties.

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