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**Comprehensive and balanced approaches to
prevent and adequately respond to new and
emerging forms of transnational crime**

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Working paper prepared by the Secretariat

Summary

The present working paper explores a multilayered typology of new and emerging forms of crime. It identifies processes of globalization; the proximity of poverty, conflict and weak rule of law to high-value markets; and the rapid emergence of new forms of modern technology, as possible roots and drivers of new forms of crime. It also explores changes in the structure of organized criminal groups and the use of corruption to facilitate offences as key *modi operandi*. The paper suggests new responses to emerging forms of crime, including innovative data collection methodologies, international cooperation, and harmonization of national legislation and approaches to crime prevention.

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Contents

	<i>Page</i>
I. Introduction	3
II. Characterizing new and emerging forms of crime	4
A. Roots and drivers	5
B. New modi operandi	9
III. Comprehensive and balanced responses	11
A. Converting drivers of emerging forms of crime into new responses	12
B. Innovative data collection methodologies	13
C. Strengthening national legislation, international cooperation and law enforcement capacities	14
D. Prevention	17
IV. Next generation of emerging forms of crime and the global development agenda	18
V. Conclusions and recommendations	19

I. Introduction

1. Over the past five years, new and emerging forms of crime have become increasingly prominent in the international arena, public media and criminological literature. In its resolutions 65/230, 65/232 and 66/181, the General Assembly drew attention, in particular, to five emerging policy issues: piracy, cybercrime, sexual exploitation of children, environmental crime and trafficking in cultural property.

2. Preventing and combating new and emerging forms of crime, as well as anticipating the evolution of crime, is a challenging task. A few decades ago, credit card fraud was hardly imaginable. In the past several years, the pace of technological advancement, emerging forms of crime, increasing globalization and the exponential growth of global markets have created congruent opportunities for criminal activities by generating new forms of value, creating new linkages between potential victims and perpetrators, and by reducing the risk of detection through new forms of anonymity. The exploitation of such opportunities has caused not only new forms of crime to emerge, but has also revitalized crimes that were considered to be largely of a historical nature. Modern-day piracy serves as one example of a re-emerging form of crime.

3. The identification of new and emerging forms of crime as a separate category of crime typology is often made possible through reference to pertinent crimes, such as cybercrime, environmental crime and piracy. In addition to the identification of a number of different types of crime, however, one challenge is to reinforce the analytical tools for a better assessment and description of this separate category of crime typology through identifying commonalities and differences between such new forms of crime. In this respect, reliance on crime trends or changes in crime levels as a qualifying factor for inclusion in the category may not be sufficient. Many new forms of crime are indeed increasing rapidly. However, in some regions, a number of other long-established crimes such as homicide, have also shown increases in recent years (see E/CN.15/2014/5, para. 7). Rather, description of new types of crime requires examination of attributes such as roots and drivers, *modi operandi*, victim and perpetrator profiles and the degree of involvement and structural arrangement of organized criminal groups.

4. To the extent that such commonalities and characteristics can be identified, strengthened analysis of new and emerging forms of crime could contribute to informed policy and preventive responses, as well as to the development of techniques for early detection of new crime developments. As recognized by the General Assembly in its resolution 67/184, such responses must be both genuinely comprehensive and balanced in order to prevent and adequately respond to new and emerging forms of transnational crime.

5. With the aim of contributing to this goal, the present paper explores a multilayered typology of new and emerging forms of crime based on possible causes and drivers, as well as the common *modi operandi* of perpetrators. Based on this foundation, the paper identifies possible approaches to combating new and emerging forms of crime, as well as possible recommendations to member States and the United Nations Office on Drugs and Crime (UNODC).

II. Characterizing new and emerging forms of crime

6. Three decades ago, during the regional preparatory meetings for the Seventh United Nations Congress, member States noted the emergence of new dimensions of crime. States identified, in particular, national and transnational organized crime, economic crime, illicit drug trafficking and terrorism as major sources of concern owing to their increasing sophistication and harmfulness. The Congress further discussed the potential of modern technology to produce new criminal opportunities, and called for the implementation of appropriate measures to prevent possible abuses, in particular of computer systems.¹

7. Today, organized crime, terrorism, illicit drug trafficking and economic crime have become established types of crime, despite the timely identification of new criminal opportunities some 30 years ago. As at the time of the Seventh Congress, the need to turn identification of criminal opportunity into effective prevention remains paramount.

8. However, several challenges exist with regard to identifying the common denominators of new forms of crime. Firstly, there is the issue of terminology. A number of closely interrelated terms and categories have been employed by States, United Nations entities and academia. In the United Nations context, these include the terms “new dimensions of criminality”,² “emerging policy issues” (see A/66/303, chap. IV), and “new forms and dimensions of transnational organized crime”.³ Each term captures different aspects of the way in which criminality develops. While the present paper focuses on the term “new and emerging forms of crime”, it recognizes elements from other related categories. New forms of crime may also be considered “complex”, for example, when criminal acts consist of a connected sequence of events and/or are distributed across multiple actors.

9. Secondly, many new types of crime are themselves often umbrella terms for a range of distinct offences. The notion of “environmental crime”, for instance, covers acts that have existed for many decades, such as poaching of wildlife, as well as offences that have emerged only in recent years, such as crimes relating to carbon trade and water management.⁴ Similarly, the term “cybercrime” commonly includes both offences in which computer systems or data are the object of the offence, and crimes in which computer systems or data represent the means of an offence, such as most forms of identity-related crime.

10. Thirdly, the emergence of new forms of crime does not necessarily affect all countries at the same rate or with equal severity, as reflected in the different priorities set out in the reports of the regional preparatory meetings. Some forms of crime may appear to have merely a national impact, before being gradually recognized as a transnational threat. For example, trafficking in cultural property, including illicit excavation of archaeological sites, may appear as an isolated problem of the country of origin. However, the fact that this offence endangers the

¹ A/CONF.121/22/Rev.1, chap. IV, paras. 54-55.

² Ibid., chap. III, para. 16.

³ Conference of the Parties to the United Nations Convention against Transnational Organized Crime resolution 6/1, para. 16.

⁴ See, for example, www.interpol.int/Crime-areas/Environmental-crime/Environmental-crime.

knowledge of mankind's common cultural heritage, discredits the art and antiquities market and may offer opportunities for strengthening organized criminal groups indicates that this is a criminal activity of international concern. Recognizing evolving transnational elements of new and emerging forms of crime is a critical part of broadening national responses to include responses at the regional and international levels.

11. Finally, new forms of crime may not only involve new root causes, drivers or criminal *modi operandi*, but may also be directed towards new types of victims that may be more difficult to identify. Cybercrime, such as the distribution of computer malware, can affect a very large number of victims simultaneously. Criminal justice systems that require the demonstration of an individual specific victim in prosecutions may face particular challenges in this area. Similarly, many forms of environmental crime require an expansion of the concept of victim, through recognition of distributed harm to habitats, environmental resources and communities.⁵

A. Roots and drivers

12. Although not all new and emerging forms of crime are driven by the same socioeconomic factors, a number of common developments can be identified that serve as crime facilitators, or roots and drivers. These include globalization; the proximity of poverty, conflict and weak rule of law to high-value markets; and the rapid emergence of new forms of modern technology and global connectivity.

13. Through globalization, national economies are increasingly integrated into the international economy via trade, investment, capital flows, movement of people, and the development and proliferation of technology. Rapid globalization can put stress on existing patterns of governance, creating an expanded role for non-State actors among increasingly complex inter-State interactions.⁶

14. This integration and expansion of economies provides a context for the evolution of some once largely localized problems into global phenomena. Piracy, match-fixing and illegal betting, for example, have grown to become transnational crimes, as areas such as sea trade and sport have evolved into transnational multi-billion-dollar industries, attracting vast investment and the involvement of almost all world economies.

15. While globalization has increasingly enabled the free movement of people, goods and financial flows, it has also in some cases progressed faster than the individual or collective ability of member States to regulate these movements. Growing transnational markets for wild flora and fauna, organs, medicines and cultural property, for example, may be subject to national regulation, but suffer at the global level from a lack of common definitions and regulatory standards, as well as divergent criminalization.

⁵ Glen Wright, "Conceptualising and combating transnational environmental crime", *Trends in Organized Crime*, vol. 14, No. 4 (2011), pp. 332-346.

⁶ Adil Najam and others, *Environment and Globalization: Five Propositions* (Winnipeg, Canada, International Institute for Sustainable Development, 2007).

16. This disjuncture provides a particular opportunity for criminal activity, as offenders make use of safe havens and fragmented regulatory regimes to exploit increases in object value that result from variations in national supply control.⁷ In this way, illicit or grey markets grow alongside and within licit markets. These markets can differ from illicit trafficking associated with established controlled markets, such as those related to drugs, by virtue of the fact that it is often difficult to distinguish the licit from the illicit. In new transnational markets, criminal activities may take place at the source, such as in illegal poaching of wildlife or theft of cultural property, or at any subsequent point in the supply chain, such as in diversion and tax avoidance at export or through illegal relabelling of goods prior to sale.

17. When illegally obtained or diverted goods are (re)introduced into licit markets through counterfeit documentation or corruption, the tracing of criminal activity can be extremely challenging. The licit market effectively conceals the illicit origin of the trafficked product. Transnational criminal networks responsible for wildlife and timber trafficking, as well as the smuggling of electronic waste and ozone-depleting substances, for example, often use the same routes as legal importers, but falsify certificates, exploit regulatory loopholes or obtain genuine documentation through bribery.⁸

18. Criminal opportunities can be further enhanced by the reduction of trade barriers, the establishment of free-trade zones and agreements, and high levels of consumer demand. A high demand for basic medicines in regions such as Africa, for instance, combined with limited health-care systems and national control mechanisms, contributes to the significant transnational market for fraudulent medicines (see CTOC/COP/2012/7, para. 58). A recent study found that 35 per cent of the antimalarial drugs tested in sub-Saharan Africa and South-East Asia failed chemical analysis. Of the drugs that failed the chemical analysis, 36 per cent of those tested in South-East Asia and 20 per cent of those tested in sub-Saharan Africa were determined to be falsified.⁹

19. Similarly, the illicit market in human organs is driven to a large extent by a global imbalance between organ supply and demand. This is particularly acute in the case of kidneys, owing to an increasing differential between rates of end-stage renal disease and levels of organ donation by the deceased. On the supply side, unregulated or illicit organ extraction is often attributable to poverty as a socioeconomic driver, and facilitated by a lack of adequate regulation of health-care services. Victims from vulnerable groups may be recruited under false pretences or promises by traffickers and subsequently convinced or forced to sell their organs.¹⁰

20. Where illicit markets develop, they can quickly become entwined in local and transnational economies. While maritime piracy off the Horn of Africa, for example, has decreased substantially in the past two years, pirates targeting large

⁷ *The Globalization of Crime: A Transnational Organized Crime Threat Assessment* United Nations publication, Sales No. E.10.IV.6.

⁸ UNODC, *Transnational Organized Crime in East Asia and the Pacific: A Threat Assessment* (2013).

⁹ Paul Newton and others, "Poor-quality antimalarial drugs in southeast Asia and sub-Saharan Africa", *Lancet Infectious Diseases*, vol. 12, No. 6 (June 2012), pp. 488-496.

¹⁰ Ibid.

international shipping vessels and operating up to several hundreds of kilometres off the coast claimed an estimated \$339 million to \$413 million in ransoms between April 2005 and December 2012. These criminal proceeds have been shown to flow not only to low-level pirates and pirate financiers, but also to the local community.¹¹

21. For some time, pirate attacks represented a major source of new income, with parallel illicit economies creating a dependency of coastal communities on funds obtained from piracy (see CTOC/COP/2012/7, para. 16). The proximity of conflict-affected, low governance areas with limited sustainable livelihoods to high-value international shipping routes is a major driver in this respect. Once established, large criminal flows from piracy in turn foster other forms of organized crime, the development of criminal intelligence networks and the corruption of local officials. There is also evidence that maritime piracy has contributed to destabilization through the provision of resources to groups engaged in internal armed conflict (see S/2009/146, para. 59). While intervention in the Horn of Africa has been successful, at present, in effectively ending the piracy business model in that region, the Gulf of Guinea in West Africa has experienced a recent increase in the number of armed robbery and piracy attacks.

22. Another distinguishing feature of globalization processes is the inextricable link with modern technology. As national economies grow and connect, so does the process of knowledge integration and the creation of non-market-based connections, including flows of information, culture, ideology and technology. Global Internet connectivity continues to facilitate this process at an astounding rate, with the end of 2014 seeing almost 3 billion Internet users globally.¹² Computer technology and the Internet have brought many socioeconomic benefits. Just as with other means of enhanced human interaction, however, such technologies can also be used for criminal activity, and the development of contemporary cybercrime is inseparably tied to the growth of global connectivity. As cyberspace grows, it has already become hard to imagine a computer crime, and perhaps eventually any crime, without the involvement of Internet Protocol (IP) connectivity.

23. From a criminological perspective, one key proposition is that the emergence of “cyberspace” creates new criminal phenomena that are distinct from the direct opportunities for crime that computers present. Persons may, for example, commit crimes in cyberspace that they would not otherwise commit in physical space owing to their status and position. The possibility to adopt flexible identities, anonymity and a lack of deterrence may also provide incentives for criminal behaviour in cyberspace.¹³

24. In addition, new technologies may offer novel opportunities for crime through providing new linkages between victims and perpetrators. Criminological routine activity theory proposes that crime risk increases upon the convergence of a

¹¹ World Bank, UNODC and INTERPOL, *Pirate Trails: Tracking the Illicit Financial Flows from Pirate Activities off the Horn of Africa* (Washington, D.C., World Bank, 2013).

¹² International Telecommunication Union, “*The World in 2014: ICT Facts and Figures*” (2014).

¹³ UNODC, *Comprehensive Study on Cybercrime: Draft — 2013*, prepared by UNODC for the consideration of the Expert Group to Conduct a Comprehensive Study on Cybercrime, chap. 1.3.

motivated offender, a suitable target and the absence of a capable guardian.¹⁴ In the case of cybercrime, perpetrators can access large numbers of targets through increasing use of online services such as banking, shopping, social networking and file-sharing, making users prone to “phishing” attacks or fraud. Such guardian measures that do exist, such as security software and a comparatively small risk of law enforcement action, can be insufficient to deter a perpetrator motivated by the lure of significant profit.

25. Global connectivity further introduces the driver of enhanced criminal association and peer-learning between individuals who may otherwise never come into contact. Online criminal “social networking” can enable forms of criminal “outreach” and connectivity between criminal groups. Online “carding” or “carder” forums, for example, facilitate the exchange of stolen credit card details. Online illicit marketplaces, as well as their associated online discussion boards, provide forums not only for the sale of illicit goods, but also for the exchange of information on maintaining anonymity and avoiding law enforcement attention.

26. In the area of child sexual abuse and exploitation, the Internet now affords unprecedented access to social affirmation for offenders. Whereas in the pre-digital era, perpetrators who openly discussed child sexual abuse would likely have been ostracized from mainstream communities, online communities now exist that aim to normalize and create a false impression of social acceptability for criminal acts. Such social reinforcement can be particularly strong, owing to its immediate and interactive nature (see E/CN.15/2014/CRP.1).

27. Information and communication technologies thus have the potential to drive new and emerging forms of crime in multiple ways. On the one hand, they introduce new criminal offence objects (that is, the person, thing or value against which the offence is directed), such as computer data or computer systems. On the other hand, they have also brought about fundamental changes in the nature, level and modus operandi of existing offences.

28. Consumer financial fraud, for example, has become transnational and commonplace owing to the use of credit and bank cards for online payments. Global online incitement to violence and terrorism, including through social media, greatly widens the reach and influence of previously localized terrorist groups. High levels of anonymity offered by the “darknet”, including the onion router (Tor) service, have the potential to transform the sale and purchase of illicit drugs and other products by connecting transnational buyers and sellers through an online marketplace, with payment in anonymous virtual currencies and shipping of purchases by post.

29. From this perspective, new information technologies lead to a crime “glocalization” and anonymization effect, whereby intrinsic linkages between global and local processes introduce new types of victimization into a locality. From a law enforcement point of view, global connectivity not only has an impact on local criminal practices, but also changes the relationship between the global and the

¹⁴ Travis Pratt and others, “Routine online activity and Internet fraud targeting: extending the generality of routine activity theory”, *Journal of Research in Crime and Delinquency*, vol. 47, No. 3 (2010).

local.¹⁵ Anonymization techniques, such as Tor, can further encourage the involvement of perpetrators who may not previously have been involved in criminal activity, as well as present significant challenges for law enforcement in perpetrator identification.

B. New modi operandi

30. In addition to the identification of roots and drivers of new and emerging forms of transnational crime, such crimes can also be characterized through the existence of new and distinguishing modi operandi. These include changes in the structure of organized criminal groups and increased interlinkages between criminal operations, as well as the use of corruption to facilitate offences.

31. Today, a much broader range of organized criminal groups has emerged, in part in tandem with new forms of transnational crime. For example, the UNODC *Digest of Organized Crime Cases*, published in 2012, highlighted a number of possible criminal group arrangements, including the existence of gang-type criminal groups, mixed-model groups, the participation in criminal enterprises of non-group members, and links between criminal groups and terrorist or paramilitary groups, as well as cell-based and complex networks.¹⁶ Increasing fluidity in criminal structures may also be apparent through developments in some regions, such as the replacement of violent competition between criminal gangs with inter-gang contractor-type arrangements based on informal interpersonal ties and shared economic interests.¹⁷

32. The Internet, in particular, lends itself well to broader coordination between individuals across a dispersed geographic area, opening up possibilities for shorter-lived “swarm” criminal associations. Cybercrime black markets for banking and credit card details have been characterized as social networks of individuals engaged in organized criminal activity, rather than as a single criminal group enterprise.¹⁸ In such markets, groups and individuals have different, often multiple, roles, including programmers, distributors, technical experts, hackers, fraudsters, online service hosts, cashers, money mules and leaders.

33. The specialization of key individuals within criminal networks or markets can be one distinguishing feature of new and emerging forms of crime. While, for example, many basic forms of wildlife and forest crime exist, the illegal poaching or harvesting of endangered species can require detailed planning, as well as access to specialized equipment for processing and preservation, including specialized cages, appropriate food and tranquillizing medication. Members of poaching gangs may have specific roles, such as marksmen, cooks, drivers or skimmers. When illegally harvested products are sold as legitimate products or passed off as different products, criminals must counterfeit items such as labels, tins or jars that are

¹⁵ David Wall, *Cybercrime: The Transformation of Crime in the Information Age* (2007).

¹⁶ UNODC, *Digest of Organized Crime Cases: A Compilation of Cases with Commentaries and Lessons Learned* (New York, United Nations, 2012).

¹⁷ Kay Kei-ho Pih and others, “Gangs as contractors: the social organization of American Taiwanese youth gangs in southern California”, *Trends in Organized Crime*, vol. 13, No. 2-3 (September 2010).

¹⁸ UNODC, *Comprehensive Study on Cybercrime*, chap. 2.3.

identical to those used by legitimate traders.¹⁹ For cultural property to be trafficked, structured networks of different degrees of complexity are necessary, involving looters or thieves, smugglers and other intermediaries, as well as collectors. In this broad context, the role of each member of the network can vary, and the design and geographical extent of organized criminal groups may be considerably influenced by the opportunities afforded by Internet sales.²⁰

34. Instead of relying on established long-term networks, criminal groups engaged in new forms of crime may hire specialists to perform tasks not covered by the knowledge and skills of the existing group. In this way, a professional, continually evolving, service-based criminal industry drives the innovation of tools and methods used by criminals. Traditional organized criminal groups, including those with a mafia-style structure, are beginning, for example, to use the service-based nature of the cybercrime market to carry out more sophisticated crimes, buying access to the technical skills they require. This trend towards adopting the cybercrime features of a more transient, transactional and less structured organizational model may reflect how all serious crime will be organized in the future.²¹

35. Indeed, the increasing ability of groups to organize and convene criminal resources, as well as to employ specialist skills at short notice, is resulting in new interconnections between established and emerging forms of crime. As concerns transnational drug trafficking, for example, evidence suggests that one criminal group hired specialized hackers for a period of two years, beginning in mid-2011, to support the trafficking of illicit drugs through a European port. By infiltrating the port's computer systems via malicious software sent in e-mails to port staff, the hackers enabled the organized criminal group to access information on the location and security status of containers at the port, as well as to disguise their illicit activities.²²

36. While the role of modern technology in criminal activity is doubtless increasing, the use of established methods, such as bribery and corruption, nonetheless continues to represent a hallmark of the *modus operandi* of new and emerging forms of crime. Illicit cross-border trafficking and movement, in particular, is frequently facilitated by the corruption of local officials (see S/2012/777). In the illicit transboundary movement of toxic or electronic waste, for example, corruption may occur during the issuance of shipment notifications or movement documents, when the State of import consents to the shipment, or at any number of border control points.²³

37. Trafficking in human organs is dependent, in many cases, on a nexus between criminal groups and medical professionals who are prepared to transplant organs or falsify medical records in return for illegal payments. No single *modus operandi* likely dominates in this case. Rather, different forms of corruption may operate

¹⁹ John Sellar, "International illicit trafficking in wildlife", *The Police Chief* (June 2007).

²⁰ See Peter Campbell, "The illicit antiquities trade as a transnational criminal network: characterizing and anticipating trafficking of cultural heritage", *International Journal of Cultural Property*, vol. 20 (2013).

²¹ Europol, *The Internet Organised Crime Threat Assessment 2014*, 11.

²² Tom Bateman, "Police warning after drug traffickers' cyberattack", 16 October 2013. Available from www.bbc.com/news/world-europe-24539417.

²³ UNODC, *Corruption, Environment and the United Nations Convention against Corruption* (2012).

throughout the process of organ donation and transplantation, and in different ways with respect to living and deceased donors. Corruption can facilitate criminal engagement, for example, in the process of organ procurement and allocation, unregulated or illegal organ removal, or in the cross-border movement of organ recipients or even organs themselves for transplant purposes.

38. In other cases, corruption can both facilitate and be facilitated by new forms of crime. In the case of identity-related crime, for example, corruption can enable identity theft through the use of active or passive bribery of officials for the purposes of obtaining genuine identity documents belonging to another person, or the alteration of information in order to create or validate a false identity. On the other hand, identity-related crime can be used as a means of avoiding detection in the course of corruption offences. False identities may be used, for example, to frustrate the investigation of offences such as embezzlement or the laundering of proceeds from new and emerging forms of crime.

III. Comprehensive and balanced responses

39. In approving the provisional agenda for the Thirteenth Congress, the General Assembly, in its resolution 67/184, recognized that responses must be both comprehensive and balanced in order to prevent and adequately respond to new and emerging forms of transnational crime.

40. The “comprehensive” element suggests that approaches and strategies relating to new forms of crime should be aimed at addressing all forms of new crime, as well as taking account of the roots and drivers and *modi operandi* discussed above. Going beyond purely crime prevention and criminal justice issues, a comprehensive approach may also integrate responses into the broader context of rule of law, sustainable development, environmental protection and economic growth.

41. In a related sense, the “balanced” element demands that crime prevention, investigative and punitive measures be put in place concurrently, with corresponding effort and resources. A balanced approach might also be understood to include the involvement of a range of actors in the crime response, including private enterprises, civil society, academia and victims, as appropriate.

42. Such requirements apply not only to national-level responses, but also to international responses and capacity-building activities. The UNODC Global Programme for Combating Wildlife and Forest Crime, for example, is aimed at addressing illicit supply of and demand for wild fauna and flora through a comprehensive approach, which includes law enforcement, prosecutorial and judicial capacity-building, review and strengthening of legislative frameworks, awareness-raising and provision of sustainable livelihoods. The Programme also works to strengthen responses through transport container profiling for illicit trafficking in wildlife and timber, as well as anti-money-laundering work and recovery of proceeds from wildlife and timber crimes. In this way, the Programme focuses on a long-term impact-driven approach and evidence-based interventions.

A. Converting drivers of emerging forms of crime into new responses

43. One starting point for the development of comprehensive and balanced responses is to consider how the very roots and drivers that underlie new and emerging forms of crime could themselves offer opportunities for preventing and combating such crime.

44. While, for example, globalization has been identified as one enabler of new and emerging forms of crime, globalization at the same time offers many opportunities for enhanced transnational law enforcement and criminal justice responses. Faster transportation and communication, for example, can facilitate the development of formal and informal international cooperation networks among law enforcement officials, prosecutors and central authorities. New cooperation networks such as the Central American Network of Prosecutors against Organized Crime and the Network of West African Central Authorities and Prosecutors against Organized Crime, provide key platforms for sharing information on new crime developments and the delivery of training on prevention and responses.²⁴

45. Similarly, whereas the emergence of new markets and increased market connectivity can result in fragmented regulatory regimes and illicit economies, strengthened understanding of the process can at the same time generate specific opportunities for intervention. The International Guidelines for Crime Prevention and Criminal Justice Responses with Respect to Trafficking in Cultural Property and Other Related Offences,²⁵ for example, recognize the importance of combating the illicit trade in cultural property through market-related measures such as introducing or improving statistics on import and export of cultural property, introducing mechanisms to enable the reporting of suspicious dealings or sales on the Internet; establishing or developing inventories or databases of cultural property and encouraging the reporting by cultural institutions and the private sector of suspected trafficking in cultural property. Initiatives such as the UNODC-World Customs Organization Container Control Programme are further aimed at minimizing the exploitation of maritime containers for illicit trafficking, through a process of risk analysis and container profiling aimed at countering illicit traffic in a high-volume, high-throughput cargo environment.

46. In the same way, advances in technology that provide criminal tools also offer new routes for investigators. The wealth of information both available publicly from social networking sites and chat forums, and stored on electronic devices such as smartphones that can be seized during law enforcement operations generates a new resource, and often a crucial starting point, for criminal investigations. While perpetrators may make use of techniques such as encryption, Tor, or anonymous virtual currencies for illicit transactions, such technologies are only as effective as the “human factor” behind them. Many law enforcement investigations are ultimately successful as a result of unintended connections left by perpetrators between “anonymous” information associated with a criminal offence and identifying information, such as an IP address or an e-mail address. Law enforcement agencies may also make use of modern technologies for the secure

²⁴ See www.unodc.org/unodc/en/organized-crime/international-cooperation-networks.html.

²⁵ General Assembly resolution 69/196, annex.

sharing of information,²⁶ for advanced data interception or surveillance techniques authorized by the courts, or through the use of remotely piloted aircraft systems for operations such as countering poaching.²⁷

B. Innovative data collection methodologies

47. The effectiveness of measures against any type of crime depends, to a large extent, upon the evidence base. New and emerging forms of crime are no different. When it comes to new crimes, however, their complex nature, combined with their diverse *modi operandi*, makes the application of traditional data sources, such as police crime statistics, extremely challenging. Many new forms of crime frequently do not come to the attention of the police, resulting in a large “dark figure of crime” and making it difficult in police statistics to link acts that are brought to their attention with the phenomenon of new and emerging forms of crime.²⁸

48. Approaches to redress this gap may include the use of a combination of data sources, including police statistics, proxies such as seizure data on illicit goods, surveys of key informants and market users, and new information sources, such as geographic information systems and computer security products.²⁹ Previous UNODC transnational crime threat assessments, for example, have made use of a range of data to identify and define illicit market flows in terms of routes (source, destination and vector), dimensions (annual market volume and value), perpetrators (groups involved) and threat (trend and effects).³⁰ Other UNODC studies have adopted market-based approaches based on seizure and consumption statistics and modelling based on estimates of market size, profit and the proportion of profit laundered, in addition to law enforcement, criminal justice and public health data.³¹

49. For the future, the concepts of “big data” and “information exhaust” may come to represent critical information sources for characterizing the nature and extent of new forms of crime. These concepts rely on the idea of monitoring information patterns that are routinely generated, but may change in response to certain crime events. In the area of maritime piracy, for example, the deviation of a vessel from its expected course, as measured by geographic information systems, may be one early indicator of attempted hijacking or robbery. With respect to wildlife and forest crime, changes in habitual geographic feeding or migration patterns of endangered species may reflect illicit poaching or entrapment threats. In the area of cybercrime,

²⁶ See, for example, www.interpol.int/INTERPOL-expertise/Data-exchange/I-24-7.

²⁷ See, for example, www.publications.parliament.uk/pa/ld201314/ldhansrd/text/140325w0001.htm.

²⁸ Steven Malby, “Data collection on (new) forms and manifestations of crime”, in *New Types of Crime: Proceedings of the International Seminar held in connection with HEUNI’s thirtieth anniversary: Helsinki 20 October 2011*, Publication Series, No. 74, Matti Joutsen, ed. (Helsinki, European Institute for Crime Prevention and Control, affiliated with the United Nations (HEUNI), 2012).

²⁹ Ibid.

³⁰ UNODC, *The Globalization of Crime: A Transnational Organized Crime Threat Assessment*, (2010).

³¹ See, for example, *The Global Afghan Opium Trade: A Threat Assessment* (2011), *Estimating Illicit Financial Flows Resulting from Drug Trafficking and Other Transnational Organized Crimes* (2011), *Global Study on Homicide* (2011) and *Global Report on Trafficking in Persons* (2009).

automated response data generated by security software can provide information on the nature and possible geographic source of computer attacks.

50. The foundation of all data collection efforts is the development of effective statistical and analytical capacity, primarily at the national level but also at the regional and global level. Indeed, the transnational nature of many new crimes requires that data collection should not be restricted only to the most affected countries. As exemplified by trafficking in wildlife, while the primary damage may occur in the country of origin, any comprehensive and balanced response requires an understanding of the whole trafficking chain, the nature of the markets involved and the *modi operandi* of the criminal groups concerned, as well as details on associated financial flows, in all involved countries, including origin, transit and destination countries. Sharing of collected data across sectors and countries can be crucial in effectively anticipating, preventing and combating new forms of crime.

C. Strengthening national legislation, international cooperation and law enforcement capacities

51. Participants in all four regional preparatory meetings for the Thirteenth Crime Congress emphasized the need to review national criminalization and procedural law frameworks for the investigation and prosecution of new and emerging forms of transnational crime.³² In line with the identification of divergent regulation as one potential driver of emerging forms of crime, participants in the preparatory meetings emphasized, in particular, that harmonization of national legislation within and across borders was vital in order to reduce safe havens for criminal conduct.

52. In many countries, new and emerging forms of crime may not be sufficiently covered by existing criminal legislation, or may be criminalized in a fragmented manner or regulated solely by administrative laws. A joint study by UNODC and the International Olympic Committee on match-fixing and irregular betting, for example, found that regulatory action to cope with new crime phenomena may take place either by using or adapting existing legal solutions, or by introducing new ones. With respect to match-fixing, the study found that only a limited number of jurisdictions were in a position to effectively address the threat. Even in those jurisdictions which had established criminal offences for match-fixing, offences diverged in terms of the range of covered sporting competitions, the extent of the focus on bribery, the identification of potential perpetrators and the definition of the goals of match-fixing.³³

53. With respect to national approaches to criminalization of cybercrime acts, the *Comprehensive Study on Cybercrime* found that a range of legal approaches were employed. Acts against computer systems and data, for example, tended to be prohibited through specific offences, such as illegal access or illegal interference with a computer system or data, whereas acts involving computer systems, such as

³² A/CONF.222/RPM.1/1, para. 30; A/CONF.222/RPM.2/1, para. 33; A/CONF.222/RPM.3/1, paras. 55-56; A/CONF.222/RPM.4/1, paras. 56-57.

³³ International Olympic Committee and UNODC, *Criminalization Approaches to Combat Match-fixing and Illegal/Irregular Betting: a Global Perspective* (Lausanne, Switzerland, and Vienna, 2013).

computer-related identity offences, tended to be criminalized through general offences.³⁴

54. Such studies highlight that, while there may be a number of similarities in national legislative approaches to new forms of crime, some key differences may also present significant challenges to effective international cooperation in criminal matters. Where the principle of dual criminality applies, the act to which a request for international cooperation relates must be a crime according to the criminal law of the requested State, as well as the requesting State.³⁵ A key factor in establishing dual criminality is usually the substantive underlying conduct, and not the technical terms or definitions used in national laws.³⁶ Nonetheless, in the case of some emerging forms of crime, criminalization may be completely lacking for a particular act. The *Comprehensive Study on Cybercrime* showed, for example, that production, distribution or possession of computer misuse tools was not criminalized at all in almost 20 per cent of responding countries.³⁷

55. At the global level, harmonization of legislation for the prevention and combating of emerging forms of crime may be achieved through a number of routes. Some specific areas are regulated by international treaties. Examples of treaties related to harm to the environment are the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora and the 1989 Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal. Treaties relevant to trafficking in cultural property include the 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict, and the two protocols thereto, and the 1970 Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property. Such instruments may not always, however, require legislation on all aspects of the phenomenon. Parties to the Endangered Species Convention, for instance, are bound to penalize illegal cross-border trade of wildlife, but not necessarily domestic trade. Parties to the Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property have undertaken to “impose penalties or administrative sanctions” on persons violating the prohibition on exporting cultural property without an appropriate export certificate, and for importing cultural property stolen from a museum or a religious or secular public monument or similar institution in another State party, provided that such property is documented within the inventory of that institution. Other types of crime, such as cybercrime, fraudulent medicine and trafficking in human organs, do not benefit from binding international legal standards, but may be regulated under some regional instruments.³⁸

56. Where no binding legal standards exist, harmonization of legislation may nonetheless be promoted through a range of means, including the promulgation of non-binding guidelines, standards, recommendations or model laws, as well as through identification of good legislative practice and technical assistance. The

³⁴ UNODC, *Comprehensive Study on Cybercrime*, chap. 4.1.

³⁵ UNODC, *Manual on Mutual Legal Assistance and Extradition* (2012).

³⁶ See, for example, art. 43, para. 2, of the United Nations Convention against Corruption.

³⁷ UNODC, *Comprehensive Study on Cybercrime*, chap. 7.3.

³⁸ See, for example, the Council of Europe Convention against Trafficking in Human Organs, the Council of Europe Convention on the Manipulation of Sports Competitions and the Council of Europe Convention on Cybercrime.

International Guidelines for Crime Prevention and Criminal Justice Responses with Respect to Trafficking in Cultural Property and Other Related Offences, for instance, provide that States should consider criminalizing as serious offences a range of specific acts, including trafficking in cultural property, theft of cultural property and looting of archaeological and cultural sites.³⁹ As part of its efforts to combat illicit trafficking in fraudulent medicine, UNODC is developing model legislative provisions. Similarly, the elaboration of model legislation on identity-related crime can be of added value for member States wishing to be guided by a set of model provisions in structuring effective legal responses.⁴⁰

57. Overall, criminal law responses to new and emerging forms of crime may be most effective when they retain a balance between specific provisions that target the conduct and/or commodity or market involved (in the case of illicit trafficking), with sufficient legal certainty, while remaining flexible enough to take account of possible future developments. Where States make offences punishable by a maximum deprivation of liberty of at least four years or more, and are party to the United Nations Convention against Transnational Organized Crime, then the transnational investigation of such offences can benefit from provisions of the Convention, when the offence is transnational in nature and involves an organized criminal group.⁴¹

58. Even where legislation is harmonized and international cooperation can benefit from instruments such as the Organized Crime Convention, significant challenges may remain. In the area of cybercrime, for instance, the fact that data and online transactions are increasingly moving to a distributed, peer-to-peer model means that no single State or States to whom an international cooperation request could be addressed in the first place may be identifiable. Such developments might increasingly require new forms of cooperation, including innovations such as mutual recognition of investigative actions, as well as efforts to reconceptualize the role of traditional territorial-based notions of sovereignty in the context of increasing global electronic connectivity.

59. In terms of law enforcement capacities, many serious cases of new and emerging forms of crime involve a degree of sophistication that challenges even the most developed and well-equipped States and poses an even more serious challenge for developing countries and for international cooperation. Forensic expertise on information and communications technologies is needed to investigate and gather and preserve evidence. Substantive knowledge of legitimate financial and economic systems, accounting, money-laundering techniques and identity systems is also important. The rapid evolution of criminal techniques requires regular updating of training materials and retraining of officials.

³⁹ Economic and Social Council resolution 2014/20.

⁴⁰ See E/CN.15/2013/25, para. 44 and appendix I.

⁴¹ United Nations, *Treaty Series*, vol. 2225, No. 39574, arts. 2 and 3.

D. Prevention

60. Crime prevention is a multisectoral, multidisciplinary and integrated endeavour.⁴² Addressing the complex nature and roots and drivers of new crimes requires a holistic prevention approach that itself utilizes new and innovative measures, and that involves all stakeholders.

61. One key component of crime prevention is awareness-raising among potential victims and other stakeholders. Emerging forms of crime are typically more complex than most conventional crimes, and may sometimes have a less obvious constituency to which awareness initiatives should be addressed. Nonetheless, the principle is equally important. Information on indicators of possible illicit origin of wildlife and medicinal products can be supplied to traders and consumers, for example. Governments and enterprises also increasingly disseminate information on basic steps, such as choosing strong passwords and treating e-mail attachments with caution, that can be taken to reduce the risk of cybercrime. Recently, an awareness-raising campaign jointly conducted by UNODC, the World Tourism Organization and the United Nations Educational, Scientific and Cultural Organization was aimed at advising international travellers not to take part in wildlife crime, trafficking in cultural property, counterfeiting, trafficking in persons and illicit drug trafficking.⁴³ Many such awareness initiatives, including mechanisms for reporting possible crimes or victimization, may arise from public-private partnerships.

62. Messaging can also be addressed to persons at risk of becoming involved in emerging forms of crime. In Somalia, prevention initiatives have reached out to youth with the aim of dissuading them from becoming involved in piracy. Through liaison with community leaders, politicians and religious leaders, anti-piracy messages were distributed through media and at community gatherings, accompanied by efforts to develop sustainable alternative livelihoods in Puntland (see CTOC/COP/2012/7). Even at a basic consumer level, information on good practices that may help to prevent crime is important. In China, for example, one initiative makes use of a web-based application to help prevent, at the source, the illegal disposal and subsequent trafficking of electronic waste. Through the application, users can upload photos of their old electronic devices and receive an estimated price. The used electronics are then picked up by an electronics vendor, ensuring that they are recycled correctly.⁴⁴

63. Equally important in the area of prevention is the need for policies that address the vulnerabilities that lead individuals and groups to engage in new forms of crime in the first place. Acts of environmental crime and piracy, for example, may constitute the only source of livelihood available to perpetrators and their families. Such approaches may aim to increase access to alternative livelihood opportunities for those individuals at risk and to reduce the local supply of potential operatives that can be recruited by criminal syndicates, with the purpose of enabling savings

⁴² UNODC and United Nations Human Settlements Programme, *Crime Prevention Assessment Tool: Criminal Justice Assessment Toolkit* (New York, 2009).

⁴³ See www.bearesponsibletraveller.org.

⁴⁴ See United Nations Development Programme, "Harnessing the power of big data" (18 August 2014). Available from www.cn.undp.org.

within the criminal justice system and avoiding the grave effects of imprisonment on individuals, their families and societies as a whole.

64. Finally, the use of new technologies can also play a particular role in prevention approaches such as surveillance and target hardening. Some countries in the Americas and the Middle East, for example, have made use of remotely piloted aircraft systems to map, monitor and safeguard archaeological sites, helping to prevent the risk of looting of cultural property.⁴⁵ New technologies can also play a crucial role in preventing the production and distribution of fraudulent medicines. Legitimate manufacturers, wholesalers, dispensers and logistics providers can increasingly employ track-and-trace technology with secure product labelling and identification. This enables stakeholders at all points along the distribution chain to identify and authenticate medicines and the legitimacy of trading partners, as well as facilitate the investigation and seizure of suspected fraudulent medicines.

65. Overall, prevention initiatives for emerging forms of crime will likely need to employ a range of approaches, including awareness-raising and specific interventions aimed at disrupting entry points for illicit markets. A multi-stakeholder approach will often prove to be key in this regard.⁴⁶ Recent successes in preventing piracy off the Horn of Africa, for example, have been largely the result of close cooperation between the maritime industry, Governments, the private security sector, think tanks and civil society. This has led to the development of practical solutions regarding naval and operational coordination, the resolution of legal and judicial issues, self-protection measures for the shipping industry, and disruption of illicit pirate enterprises on shore.

IV. Next generation of emerging forms of crime and the global development agenda

66. The international community has made significant progress in identifying and developing responses to new and emerging forms of crime. These actions are critical to mitigating the potential negative impact of such crimes on human development. As recognized by the Open Working Group on Sustainable Development Goals, in its proposed goal 16, sustainable development can be significantly affected by illicit financial and arms flows, organized crime, abuse and exploitation of children, and all forms of corruption and bribery (see A/68/970 and Corr.1).

67. In addition, goal 11.4 of the Open Working Group recognizes the importance of strengthening efforts to protect and safeguard the world's cultural and natural heritage. Goal 12.4 is aimed at significantly reducing the release of chemicals and waste into the environment. Goal 14.4 calls for effective regulation of illegal, unreported and unregulated fishing, and goal 15.7 calls for urgent action to end poaching and trafficking of protected species of flora and fauna and to address both the demand and supply of illegal wildlife products.

⁴⁵ See, for example, William Neuman and Ralph Blumenthal, "New to the archaeologist's tool kit: the drone", *New York Times* (13 August 2014).

⁴⁶ See also agenda item 6 and workshop 4 of the Thirteenth Congress for a detailed discussion of public participation in crime prevention and criminal justice.

68. The inclusion of these issues in the outcome document of the Open Working Group is a timely reminder that, if left unchecked, transnational crime will continue to exploit an ever-changing world, with adverse effects on development. The present paper has considered the particular emerging crime roots and drivers of emerging forms of crime, including globalization; the proximity of poverty, conflict and weak rule of law to high-value markets; and the rapid emergence of new forms of modern technology, as well as the *modi operandi* of organized criminal groups, including changes in their structure and the use of corruption to facilitate offences. Today's responses themselves derive, in part, from these very factors, including initiatives to strengthen global criminal justice cooperation, to protect licit markets while disrupting and eliminating specific illicit markets, and to employ technology in preventing and controlling emerging forms of crime.

69. Almost by definition, however, the emerging forms of crime of today will not be the emerging forms of crime of tomorrow. The roots, drivers and *modi operandi* examined in the present paper are also unlikely to be the same as those examined at the time of the next Crime Congress. Processes of globalization and technological development will likely continue, accelerate and persist in playing a role in driving criminal innovation. Other phenomena, however, including climate change, developments in biotechnology and bioengineering, water scarcity, virtual currencies, widespread crowd-sourcing and decentralization of value and services, new forms of energy such as nuclear fusion, and advances in robotics, autonomous systems and artificial intelligence may all come to create new markets, opportunities, roots, drivers and *modi operandi* for crime.

70. Meeting this challenge will require a continued focus on the common human factors behind many forms of criminality, including consistent efforts to prevent and reduce corruption, to provide sustainable livelihoods and address poverty and inequality. At the same time, new socioeconomic innovations will likely need to be accompanied by timely and appropriate regulatory responses, as well as the inclusion of "prevention by design", in order to reduce potential for criminal misuse. Overall, comprehensive and balanced responses to the new and emerging forms of crime of tomorrow will need to counter criminal innovation with global, inventive, systematic and coordinated prevention and criminal justice initiatives. Inclusion of both established and new issues related to crime, including illicit trafficking, corruption, trafficking in wild flora and fauna, environmental protection, and cultural heritage, within the emerging post-2015 development agenda is a key step in this direction. As the impact of emerging crime on sustainable development is highlighted and better understood, so too can the range, effectiveness and policy priority of responses be further strengthened.

V. Conclusions and recommendations

71. The Thirteenth United Nations Congress on Crime Prevention and Criminal Justice may wish to consider the following recommendations:

(a) Member States, in collaboration with UNODC, should further develop research methods and monitoring capacities for identifying possible roots and drivers and *modi operandi* of emerging forms of crime, with a view to better understanding trends in such crimes and the links between their various forms;

(b) Member States should ensure the development, implementation, monitoring and evaluation of comprehensive and evidence-based policies to combat new and emerging forms of crime;

(c) Member States should review national criminalization and procedural law frameworks for the investigation and prosecution of new and emerging forms of crime, in order to reduce safe havens for criminal conduct and ensure that laws effectively balance specificity and flexibility;

(d) Member States should strengthen law enforcement at the national and international levels to address new and emerging forms of crime, including through enhanced capacity at the national level and strengthened cross-border and regional cooperation, with a view to combating trafficking in emerging illicit markets, including in wild flora and fauna, fraudulent medicine, human organs and cultural property;

(e) Member States should examine ways and means of optimizing existing forms of international legal cooperation for the investigation and prosecution of emerging forms of crime and, where appropriate, developing new forms of such cooperation, including through making full use of relevant international legal instruments, including the United Nations Convention against Transnational Organized Crime and the United Nations Convention against Corruption;

(f) Member States should foster the prevention of new and emerging forms of crime, including through awareness-raising initiatives, the further development of public-private partnerships and cross-border and cross-sectoral sharing of information on new forms of crime, as well as specific interventions aimed at the suppression and disruption of illicit markets;

(g) UNODC should undertake further research, analysis and delivery of technical assistance, upon request, concerning the application of provisions of the Organized Crime Convention to new and emerging forms of crime, including in respect of cross-cutting issues such as mutual legal assistance, special investigative techniques and the protection of victims and witnesses;

(h) UNODC should utilize the widest possible range of existing expertise and ensure synergies between different stakeholders involved in the prevention and fight against new and emerging forms of crime, including through the development of collaborative schemes and partnerships with key international and regional organizations, as well as private sector entities and academia.