POLICY BRIEF



TRAFFICKING OF CONTAGION

ENVIRONMENTAL CRIME AND BIOLOGICAL THREATS IN THE GREATER MEKONG

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APRIL 2022

ACKNOWLEDGMENTS

The authors wish to thank colleagues from across numerous institutions who have provided their perspectives for this policy brief. These institutions include multilateral, bilateral and national agencies that work across issues of environmental crime and biological threats. We also benefited from the insights of many academics who engage in evidence generation in relation to environmental crimes and biological threats. Given the sensitive nature of much of this work, we wish to protect the identity of our colleagues who have provided their perspectives and look forward to working with them all as we go forward in developing interventions. We would also like to thank Alastair MacBeath, Virginia Comolli and Louise Taylor for their support, advice and direction, which has been invaluable. This policy brief was made possible with funding by the government of Norway.

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SUMMARY

Most of the vast number of commodities derived from wildlife and other environmental resources that are traded illicitly across the Greater Mekong Subregion (GMS) have direct or indirect implications for biological threats. The most serious of these is the risk of zoonotic pathogens and their implications for health.

Since the 2000s, increasing focus on the role played by transnational organized crime in the illegal wildlife trade has resulted in such forms of crime being tackled through a number of security approaches, but primarily through law enforcement interventions. However, the COVID-19 pandemic has provided a unique opportunity to explore alternative strategies, namely ones that focus on health risk. Health is increasingly now recognized as a critical requirement for global security, as guaranteeing the public health of nations is critical for security and stability.

Illegal trafficking of wildlife and timber are the most commonly referenced forms of environmental crime. However, there is an expanding suite of other kinds of environmental crimes that are both transnational in nature and have significant implications for biological threat in terms of the risk of contagion. Among these are river-sand mining, jade mining and the destruction of natural habitats under the guise of development. This paper explores the relationships between environmental crime, law enforcement and biological threat preparedness and response in the Greater Mekong Subregion of South East Asia. This has highlighted the need for greater biological threat awareness at the policy level, and its incorporation into environmental crime enforcement strategies. This approach necessitates a better understanding of biological threats among security sector actors, and their need to cultivate partnerships with health sector agencies in tackling environmental crime. A greater degree of cross-border and crosssector awareness and partnerships will improve the enforcement of environmental crimes and increase biological threat surveillance, preparedness and response.

To address this issue, we recommend the following actions:

- Redefine health as a national security priority
- Increase partnership between enforcement and health
- Increase investment and resources
- Donor organizations and NGOs to classify biological threats as security concerns
- Further research to guide future projects



BACKGROUND: AN EMERGING BIOLOGICAL THREAT

he Greater Mekong Subregion (GMS)¹ is home to a rich diversity of fauna and flora: the World Wildlife Fund estimates it contains some 20 000 species of plants, 1 200 bird species, 800 reptile and amphibian species, and 430 species of mammal, making it one of the most biodiverse (and agrobiodiverse) regions in the world.² Given such biodiversity, it is perhaps unsurprising that the region is also the global epicentre for the illegal trafficking and trading of wildlife, an illicit economy estimated to be worth between US\$7-23 billion a year globally.³ The Global Initiative Against Transnational Organized Crime's Organized Crime Index 2021 revealed that the trade in flora and fauna were the most prevalent illicit markets in the GMS.⁴

Few places on earth display such heightened interaction between people and their surrounding environments as the GMS, or where the untenable contradiction between development on the one hand and environmental protection on the other is so marked. This activity places enormous ecological pressure on these fragile environments, leading to an increased risk of emerging zoonotic and other biological threats in the region and beyond. Before the outbreak of COVID-19, this was perhaps best exemplified by the emergence of highly pathogenic avian influenza (known scientifically as H5N1) in China in 2003, before spreading to Cambodia later that year and then onto Thailand in 2004, leading to the global bird flu pandemic.⁵

Pathogenic outbreaks of endemic proportions are said to occur when the incidence of a particular disease surpasses the norm, or what would usually be expected. This definition predisposes, however, that there is seasonal data on specific diseases and Chickens are prepared for sale in Phnom Penh, Cambodia, August 2013. Cambodia has seen one of the worst outbreaks of avian influenza. © Nicolas Axelrod/Getty Images



FIGURE 1 Wildlife trafficking routes across the Greater Mekong Subregion.

SOURCE: Sutthiya Chantawarangul, The fight against wildlife trafficking in South-east Asia, https://europa.eu/capaci-ty4dev/file/83259/download?token=0ad-o82r

surveillance systems that can capture changes in expected incidence. In the context of novel or emerging biological threats, such systems and early identification may either be underdeveloped or absent.

In response to the emergence of COVID-19, there has been a predictable rush to invest in new technologies and capacity-building efforts to improve biological surveillance systems across the Asia region – although the idea of surveillance systems is not new in the GMS, as evidenced, for example, by the rudimentary yet successful early-warning system to detect dengue haemorrhagic fever in Yangon in 1992.⁶ In addition, the Mekong Disease Surveillance Network was established in 2001 to support cross-border disease surveillance among countries of the GMS,⁷ although the network remains under-resourced.⁸ Furthermore, there have been some developments in the area of early-warning systems in Asia spanning a range of other risks, such as climate change, tsunamis, floods and other natural or man-made disasters.⁹



The GMS, a collective grouping of China, Myanmar, Thailand, Lao PDR, Cambodia and Vietnam, was launched by these countries' respective leaders under the auspices of a development programme supported by the Asian Development Bank in 1992.¹⁰ Among the stated objectives of this programme was the increased facilitation of the movement of people and goods, and the creation of a shared economic community with the capacity to engage in collective socio-economic activities. The conditions for emerging biological threats in the GMS are driven by the region's collective focus on socio-economic development, which in fact underpinned the very genesis of the GMS as a regional economic entity. For example, one of the outcomes of this programme has been significant investment to support cross-border trade, including the designation of many cross-border areas within the GMS as special economic zones (SEZs). Although SEZs are ostensibly established to drive economic activity and connect trade corridors more efficiently, they are also often set up around casinos and wildlife farms that are known to facilitate wildlife crime. Forest rangers from Thailand, Cambodia and Laos during a mock raid in Khao Yai National Park, Thailand, as part of training to tackle wildlife crime. © Romeo Gacad/AFP via Getty Images

Ongoing environmental degradation, including from illegal logging, combined with hunting, trading and consumption of wild animals across the borders of the Mekong region continues to ensure we are always on the cusp of devastating biological threats. Without bringing together disease surveillance and law enforcement, together with local communities, to address these challenges we will constantly be at huge risk.

- Infectious-disease expert consulted for this report

Within the GMS, six countries share approximately 12 000 kilometres of land borders, which are porous and infrequently patrolled. The very notion of territorial borders in the GMS is only relatively recent, having been imposed upon the region by Europeans during the colonial era. Prior to that, the region was very much known for its ease of movement of people and goods.¹¹ Despite the presence of formal borders now, there have always been a myriad of formal and informal border crossings that have made the connected land masses of South East Asia highly porous. This has facilitated frequent cross-border movement of people, and a substantial amount of informal and formal trade, as well as a significant amount of clandestine activity.¹² Cross-border points in the GMS are essentially chokepoints where transboundary corridors funnel migration, trade and transport, and are increasingly becoming hotspots of emerging infectious diseases – a phenomenon characteristic of other tropical regions experiencing rapid and significant land-use changes.

In 1992, it was acknowledged by the GMS development plan that shared responsibility was needed to ensure that the increased movement of people and commodities resulting from the formation of the GMS would not lead to the emergence of illicit trades. Adequate infrastructure, policy and planning were also recognized as necessary so that any potential health implications from this increased movement of people, livestock and environmental commodities would not facilitate the spread of infectious disease. These needed to be achieved while preserving the environmental biodiversity of the region.¹³ Despite these commitments, the borders of the GMS remain global hotspots for flows of illicit commodities – products that are sourced through environmental criminal activity and whose trade is facilitated by the relationships between local cross-border communities, organized crime groups and corrupt government officials.¹⁴

The implications for biological threats resulting from environmental criminal activity, rapid development and the consequent destruction of ecosystems and their biodiversity in the GMS are very real. Biological incidents that have started in the Mekong region, including the SARS outbreak of 2003,¹⁵ the H5N1 avian influenza of 2003–2005¹⁶ (including regular, smaller outbreaks ever since) and the current African swine fever,¹⁷ have resulted in significant impacts on public health as well as livestock. This has had widespread economic and social consequences that encompass numerous sectors, industries and services. Against this backdrop is the overarching reality that trade in wildlife (and other environmental products) is driven by demand, which itself is made up of a value chain that links those seeking livelihood with those seeking profit and those seeking to consume.

We live in a world where the consumption of wildlife products, whether for eating or for accessory or for art, is very prevalent and it happens to be very prevalent across the Mekong – so that's one side of it. On the other side of it, here, in the Mekong, there is a competing tension between environmental and species eradication and cultural norms and economic development. These broader constructs exist globally but really play out here in the Mekong.

- An interviewee who took part in this research

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ONE WORLD, ONE HEALTH

The concept of One World, One Health, coined in 2004, posits that human health and animal health are interdependent and bound to the health of the ecosystems in which they coexist.¹⁸ Responses to human-induced destruction of biodiversity designed to take into account One World, One Health principles therefore demand transdisciplinary approaches and multi-sector expertise.¹⁹ However, in the context of environmental crime and biological threat, two major parallel discourses emerge that do not necessarily intertwine according to the principles of One World, One Health, nor do they inform each other in terms of joined-up approaches to interventions. These two discourses largely follow the separate disciplinary lines of health on the one hand and security on the other. Generally, biological threats emerging in relation to environmental crime are of seemingly little concern to law enforcement agencies, who have long tended to focus on criminal activities without much consideration that such crimes often carry significant biosecurity risks.

In the context of biological threats, however, efforts to build cross-border capacity to improve the early identification of an emerging threat remain somewhat siloed, disease-focused and, despite some regional improvements, beholden to national interests and often far removed from the areas where emerging biological threats are likely to be occurring. Therefore, although the concept of One World, One Health has seen some developments in biological threat-surveillance activities, these have remained largely confined to the mandate of public health and animal health agencies, while there has been only minimal engagement of security sector agencies. However, efforts have been made to address the threat of zoonotic diseases. Despite there being no collaboration with law enforcement over the past decade, the Vietnamese One Health Partnership for Zoonoses aims to minimize the risk of spreading animal and environmentally transmitted pathogens to humans using multisectoral A police officer surveys trafficked wildlife without protection from the risk of biological contagion. © Do Doan Hoang collaboration utilizing One World, One Health approaches. The partnership is supported by 31 Vietnamese and international organizations and is due to run between 2021 and 2025.²⁰

At a cross-border regional level, there are well-organized communities of practice that collaborate on early-warning systems for avian flu, African swine fever, and foot and mouth disease.²¹ It appears that when biological threats are related to the legal movement of livestock, to cite one example, there are significant resources being allocated to disease surveillance and quarantine, and specifically the concept of disease-free zones. Unfortunately, however, efforts to extend such surveillance networks into the complex cross-border spaces inhabited by transnational crime and where there is movement of commodities associated with environmental crimes have been negligible.

In the GMS countries, there is some historical precedence in the notion that infectious diseases are seen as transnational or national security threats, although responses to these cases have been mixed. For example, in 2005 an attempt was made to refer the conflict in Myanmar to the UN Security Council based on a report commissioned by Václav Havel and Desmond Tutu.²² The argument was that ongoing conflict in Myanmar was leading to a regional security threat, as infectious diseases, such as malaria, were being carried by refugees fleeing across the Myanmar border into Thailand. The attempt to get a UN Security Council resolution that may have led to an intervention in Myanmar was ultimately vetoed, however.

By contrast, a 2006 outbreak of avian flu in Myanmar saw the military government alerting and collaborating with the international community – even though it did not warn its own people.²³ There have also been collaborative efforts to eliminate malaria on the China–Myanmar border through partnerships between authorities on both sides, support from the Global Fund to fight AIDS, Tuberculosis and Malaria, and implemented by an NGO that has worked with local communities and their leadership structures on both sides of the border.²⁴ And, more recently, COVID-19 has brought into sharp relief the biological threat implications of the illegal wildlife trade.

Although the need for collaboration between health responders and security sectors in response to biological threats driven by zoonotic disease is recognized across Asia, there are opportunities to better link these agencies, particularly in the GMS countries. Despite willingness to strengthen capacities for such collaboration, it appears that there have been limited efforts to understand, in real terms, how to collaborate, coordinate and build capacity across the health and security interface in the region, and particularly in response to the flow of commodities associated with environmental crime at a cross-border level. Put simply, environmental crimes and the biological threats that they pose are not considered to be of critical importance within the sphere of national and regional security in the GMS.



GOVERNANCE AND LAW ENFORCEMENT CHALLENGES

A nendemic problem encountered at formal and informal border crossings throughout the GMS is the challenge of enforcing laws designed to counter environmental crimes, particularly when it comes to the flow of commodities. This is in part because security agencies (e.g. police, customs authorities, immigration and the military) have insufficient capacity. Furthermore, there are very poor levels of knowledge and expertise concerning biological threats among personnel in these agencies, which again shows that although preparedness for and response to biological threats may well exist in the higher rhetoric of national security strategies, the forms of practical engagement across sectors that are needed to deter such threats are very limited, especially along the porous borders of this subregion.

In responding to environmental crimes in the GMS, much attention has been paid at the higher policy level to the need to ensure protective legislation and regulations are in place, and that commitments to the Convention on International Trade in Endangered Species of Wild Fauna and Flora are monitored. However, law enforcement and broader governance conditions are critical factors in determining the ultimate success and impact of legislation and regulation. In the GMS, numerous reports have highlighted how weak governance severely restricts the effectiveness of legislative measures designed to prevent and combat environmental crimes.²⁵

World Bank analyses between 1996 and 2019 show that countries in the GMS rate consistently poorly with respect to measures to control corruption, rule of law, government effectiveness, freedom of expression, transparency/accountability, regulatory quality and political stability. Only Thailand and Vietnam have demonstrated relatively consistent middle-tier governance scores since 1996. By contrast, Cambodia, Laos and An Indonesian official carries seized Moluccan cockatoos in East Java, Indonesia, February 2020. Authorities in the region are seeking to clamp down on the illegal wildlife trade but lack robust capacity. © Juni Kriswanto/AFP via Getty Images Myanmar had some of the lowest rankings in corruption, effective governance and rule of law indices. Furthermore, in the Global Organized Crime Index 2021, the Mekong countries were assessed as scoring below the regional and global averages along an axis of governance indicators, including government transparency and accountability, the judicial system and prevention.²⁶ These governance indicators reflect inherent regional challenges to the effective control of environmental criminal economies.²⁷

Shortcomings in law enforcement

In May 2014, UN Member States adopted Resolution 23/1 on 'strengthening a targeted crime prevention and criminal justice response to combat illicit trafficking in forest products, including timber'. The resolution promotes the development of tools and technologies that can be used to combat the illicit trafficking of timber. Preventing illegal logging could substantially increase revenue from the legal trade in timber and halt the associated environmental degradation. However, law enforcement agencies are hampered by limitations of their current technologies and by their inability to verify timber legality due to shortcomings in their databases.²⁸

There are other inherent challenges facing law enforcement agencies in meeting the regional standards to prevent and combat illegal wildlife and timber trafficking, and other environmental crimes, such as illegal sand mining and mineral mining. These challenges revolve around capacity, collaboration, knowledge transfer and unreliable data, and, across the subregion, these combined shortcomings account for why there are low prosecution rates for cases involving environmental crimes.

- Capacity: Law enforcement officials are poorly equipped and have insufficient levels of knowledge and awareness of wildlife and forestry crime issues and challenges, particularly in how cases should be presented to the judiciary.
- Collaboration: Most GMS countries are signatories to the UN Convention against Transnational Organized Crime, the UN Convention against Corruption, the ASEAN Mutual Legal Assistance Treaty on Criminal Matters, and the International Standards on Combatting Money Laundering and the Financing of Terrorism and Proliferation.²⁹ However, there is little evidence that international information or intelligence-sharing channels are operating effectively.
- Knowledge transfer: Law enforcement agencies rarely demonstrate, develop or share up-to-date guidelines for border liaison office officials on smuggling routes, trafficking methods or notification of suspected persons or cargoes. Although wildlife and timber trafficking are crimes that would merit requests of mutual legal assistance under the ASEAN Mutual Legal Assistance Treaty within GMS countries (excluding China), there is no evidence of such legal assistance being requested in any sustained way.
- Unreliable data: Although recognizing that wildlife and timber trafficking are a direct risk to public health, ecosystems and biodiversity, there is no consolidated data set that is publicly available to inform, challenge or evaluate the effectiveness of law enforcement operations.

Although there has been a plethora of capacity-building efforts to improve law enforcement's management of environmental crimes, there has been very little effort to build capacity within enforcement agencies to deal with the occupational biological hazards associated with the policing of environmental crimes, or the need for law enforcement to understand their crucial role in biological threat surveillance. Law enforcement personnel are likely to have a good understanding of which animals or forest products are being traded illegally but little understanding of how their environmental crime enforcement efforts could affect their own health and that of the public. Appealing to the occupational health and safety aspect of law enforcement may therefore provide a refreshing opportunity to engage the police in discussions on the interface between environmental crime and the broader biological threat.

Cross-border law enforcement interventions

To improve measures aimed at more effective border control, the GMS countries signed a memorandum of understanding in 1993, the main objective being to contain the threat of illicit drug production, trafficking and use.³⁰ Border liaison offices were developed in partnership with the UN Office on Drugs and Crime (UNODC) to encourage law enforcement agencies to deploy their capacities to collaborate in fighting transnational crime, mostly narcotic trafficking. The liaison offices also act as coordinating points for law enforcement agencies to facilitate greater cross-border cooperation. Border liaison offices have been established in recognized border crossings across the subregion (see Figure 2) and function as a centralized clearing house for information received from the vicinity of border areas, and points where joint actions can be taken and coordinated.³¹ However, to date there have been only limited attempts within this mechanism to incorporate cross-border responses to environmental crimes.

There are signs, however, that things have started to change and that environmental crimes are being given the more serious consideration they warrant by the regional law enforcement sector. In March 2021, with support from the UNODC and the European Union, the Royal Thai Police established the Centre for the Investigation of Transnational Environmental Crimes within its Natural Resources and Environmental Crime Suppression Division.³² The new entity aims to provide infrastructure to support the Royal Thai Police in their role in tackling the illegal wildlife and timber trades. It might also provide much needed impetus to address the lack of interaction between disease surveillance and law enforcement (as mentioned, rarely across the region do we see security sector personnel partnering with health sector personnel) by potentially seeking to place disease surveillance experts within a specialized environmental crime unit.

Law enforcement agencies don't traditionally bring other sectors into their operational activities or spaces. There may be reasons for that in the context of environmental crimes, but there are huge opportunities to bring the health and security sectors together here when tackling the issue of environmental crime. Environmental crimes allow for the examination of the health implications of organized crime.

- Interviewee familiar with ASEAN health and security dynamics



FIGURE 2 Locations of border liaison offices in the Mekong subregion.

SOURCE: UNODC, Border Liaison Offices in Southeast Asia 1999–2009, https://www.unodc.org/documents/south-eastasiaandpacific/2010/07/blo-cambodia/Border_Book_final_6mar09.pdf

As the COVID-19 pandemic spread rapidly and people began flooding across the subregion's borders, it became clear that law enforcement officials had limited capacity to contribute to the public health response to COVID-19. Borders were then closed, with migrants bearing the brunt of the 'blame' for exporting COVID-19.³³ The UNODC, through its border liaison office programme, provided personal protective equipment for law enforcement officers stationed at border crossings as well as training on how to protect themselves against the new virus.³⁴ Although of utility, this response is still a long way from leveraging biological threat potential to drive enforcement of environmental crimes and crack down on flows of illegal environmental commodities across borders.

Corruption within the Greater Mekong Subregion

Despite signs of progress, corruption remains a critical obstacle to tackling wildlife and forestry crimes in the GMS. Corruption manifests at all levels of public office, from government actors, military personnel and law enforcement officers to local administrative personnel. Indeed, the Global Organized Crime Index 2021 shows that state-embedded actors (i.e., criminal actors that are embedded in, and act from within, the state's apparatus) are prevalent in the GMS and score significantly higher than global and regional averages. Global correlation data extracted from the Index also supports a high positive correlation between non-renewable-resource crimes and state-embedded actors, as well as a significant positive correlation between flora crimes and state-embedded actors.³⁵

Several cases highlight corrupt behaviours and misconduct of personnel at crossborder checkpoints in supporting and abetting traffickers.³⁶ To cite one such case, Cambodia implemented a log export ban in early 2016 and closed its border to Vietnam to the timber trade, yet less than 12 months later it was widely reported that Vietnamese customs and border guard personnel corruptly profited from facilitating traffickers in the illegal transport of logs from Cambodia to Vietnam.³⁷

In another incident, reported in 2016, an investigative media report revealed how senior government officials in Laos allegedly gave permission to companies known for trafficking wildlife to trade 12 different species through Laos over one year. These included crocodiles, monkeys and pangolins; the skins of 100 000 pythons; 250 tonnes of soft-shelled turtles; 100 tonnes of dog meat (which is commonly consumed in Vietnamese restaurants); 1 000 magpies; and 20 tonnes of animal bones, which are used in supposedly medicinal wine.³⁸ The deal between these companies and the government of Laos resulted in a 2% tax being levied on the total value of the trades by the government.³⁹



CONCLUSION

cross the GMS, the concept of 'health security' plays second fiddle to traditional security and law enforcement. That law enforcement and public health agencies fail to collaborate in the context of biological threats (whether these are environmental-crime-related or not) is fundamentally highlighted through the joint external evaluations that are conducted to assess the core capabilities of countries in their responsibilities to uphold the International Health Regulations 2005. These regulations state that countries must have joined-up policies, protocols and communications across public health and public security agencies in their preparedness for and response to biological threats. Most countries in the GMS are assessed as weak in their capabilities to meet this core responsibility.⁴⁰

It has become clear that a significant disconnect exists between capacity-building efforts enacted through One World, One Health biological threat surveillance on one hand, and efforts to enhance capabilities of law enforcement agencies in response to environmental crimes on the other. For example, the work of public health and animal health collaborations in Vietnam to enhance surveillance capacity to detect critical emerging or unknown viruses in humans, wildlife and livestock has highlighted the biological threat implications of wildlife farming and zoonotic risk to consumers across an entire supply chain. Yet, until very recently, there was no public security presence engaging in these collaborations in Vietnam.

However, this problem does not reside solely at the door of national governments. The health-security research concerned with human and animal infectious disease preparedness and response is generally funded by the same bilateral and multilateral agencies who fund environmental crime research. The organizations conducting this research are predominantly large international NGOs that engage with law enforcement agencies to improve the enforcement of wildlife and forestry crimes. This presents an opportunity at both the donor and NGO levels to combine environmental crime research with health-security research. Despite this, security sector reform donors tend to fund security sector partners in support of more traditional security threats, such as human trafficking, arms smuggling and counter-narcotics work, rather than health and safety risks posed by biological threats.

As a result, major gaps exist in cross-sector and cross-border responses at the interface of environmental crimes and biological threats. This ongoing misalignment of strategies and resources is particularly unfortunate in so far as it fails to capitalize on the opportunity to improve responses to environmental crimes and biological threats. Nevertheless, although the One-Health Partnership for Zoonotic Disease has been renewed in Hanoi, there has been no tangible effort to engage or collaborate with any law enforcement agencies in Vietnam since the last decade.⁴¹ To improve alignment, it is crucial to take a more integrated view of environmental crimes and biological threat surveillance, encapsulated in the recommendations below.

Leveraging biological threat reduction in response to environmental crimes will necessitate expanding collaboration beyond concerns around conservation alone. More innovative coordination between law enforcement, public health, agriculture and poverty-alleviation initiatives is critical to this effort,⁴² especially in elevating the biological threat from environmental crimes higher on the priority list of national and regional security frameworks.

Recommendations

Redefine health as a national security priority

In advancing the health and security-sector interface, there are opportunities to foreground health as a driver of national security imperatives. This requires national authorities to give much greater consideration to the biological threat potential of environmental crimes when developing national security strategies. This is a complex endeavour that needs to account both for the limits of statehood in many border areas and the dynamics of networked communities living in and around border areas where the commodities of environmental crimes flow. Therefore, we need to consider the dynamics on the ground and how all stakeholders, including health sectors and the process, help reduce and eradicate transnational organized crime.

Increase partnerships between enforcement and health

Greater partnership development is needed between law enforcement and One Health programmes. If actors could bridge this gap, we could develop more robust strategic early-warning systems for both environmental crimes and biological threats across distant but connected locations – places where the movement of people, animals and goods is supported by deeply ingrained networks, such as formal and informal border zones.

Increase investment and resources

There is a need to resource and invest in biological threat awareness in a number of enforcement agencies, including police, customs, immigration and border forces. This also requires us to engage with local communities in border areas where the relationship between crime and livelihoods is often grey, and where environmental crimes and crimes against the environment are often merged into the rubric of social and economic development. Currently, we continue to observe a well-rehearsed practice whereby actors from central government of a particular state and their bilateral and multilateral partners that seek to influence that state engage in discourse and hammer out short-term agreements and projects that do not respond to environmental crimes or biological threats sustainably over the long term.

Donor organizations and NGOs should classify biological threats as security concerns

The bilateral and multilateral agencies that fund environmental-crime research, along with the international NGOs who aim to improve the enforcement of wildlife and forestry crime through engagement with law enforcement agencies, should classify biological threats as security concerns. This will bring environmental crime and health-security research under one umbrella instead of having security-sector reform donors solely funding security-sector partners without regard to the health and safety risks posed by biological threats.

Further research to guide future projects

Further work in the form of research is required to understand current connectivity between security actors, health actors and communities to better support the health orientation (e.g., training and commitments) that security actors would need. The border zones of the GMS offer a good opportunity on a systematic and practical basis for improving strategic early warning of biological threats and early containment capability. Sentinel sites at key locations are not necessarily a new proposition but biological threat surveillance at choke points remains seriously underdeveloped, particularly because agencies responsible for environmental crime management are not connected to agencies responsible for biological threat surveillance.

NOTES

- 1 The basin of the Mekong, the second largest river in the world, spans Myanmar, Thailand, Laos, Vietnam, Cambodia and the Chinese province of Yunnan, where it has its source.
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