Harnessing knowledge, generating evidence, and supporting innovative policy and practice for more effective anti-corruption programming
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it
1. All participants are muted

*Given high attendance in this webinar, all lines will remain muted*

2. Exchange thoughts and pose questions

*Introduce yourself and share your own insights and questions in the chat window*
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it

Dr. Louise Shelley
Director, Terrorism, Transnational Crime and Corruption Center
Professor, Schar School of Policy and Government, George Mason University
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it
### Increased Awareness of Environmental Risks: WEF 2020 *Global Risks Report*

<table>
<thead>
<tr>
<th>Top 10 risks in terms of Likelihood</th>
<th>Top 10 risks in terms of Impact</th>
<th>Categories</th>
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</thead>
<tbody>
<tr>
<td><strong>1. Extreme weather</strong></td>
<td><strong>1. Climate action failure</strong></td>
<td>Economic</td>
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<td><strong>2. Climate action failure</strong></td>
<td><strong>2. Weapons of mass destruction</strong></td>
<td>Environmental</td>
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<td><strong>3. Natural disasters</strong></td>
<td><strong>3. Biodiversity loss</strong></td>
<td>Geopolitical</td>
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<td><strong>4. Biodiversity loss</strong></td>
<td><strong>4. Extreme weather</strong></td>
<td>Societal</td>
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<td><strong>5. Human-made environmental disasters</strong></td>
<td><strong>5. Water crises</strong></td>
<td>Technological</td>
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<td><strong>6. Data fraud or theft</strong></td>
<td><strong>6. Information infrastructure breakdown</strong></td>
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<td><strong>7. Cyberattacks</strong></td>
<td><strong>7. Natural disasters</strong></td>
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<td><strong>8. Water crises</strong></td>
<td><strong>8. Cyberattacks</strong></td>
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<td><strong>9. Global governance failure</strong></td>
<td><strong>9. Human-made environmental disasters</strong></td>
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<tr>
<td><strong>10. Asset bubbles</strong></td>
<td><strong>10. Infectious diseases</strong></td>
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Considering responses in the context of systems change
Beyond Boundaries

Emerging zoonotic diseases, nature, and human well-being

We must realize that in our crowded world of 7.7 billion people, a combination of altered human behaviors, environmental changes, and inadequate public health mechanisms now easily turn obscure animal viruses into existential human threats.

(Morens et al. 2020)
Rise of new emerging infectious diseases (EIDs)
<table>
<thead>
<tr>
<th>Zoonotic Pathogen Types</th>
<th>Host/Reservoir</th>
<th>Vector/Intermediate Host</th>
<th>Human Infection</th>
<th>Direct Drivers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vector-borne zoonotic</td>
<td>Example: West Nile virus, Lyme disease</td>
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<tr>
<td>2. Vector-borne with zoonotic origin; now restricted to people</td>
<td>Example: malaria, dengue fever</td>
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<td>3. Direct transmission from animal host, no secondary transmission</td>
<td>Example: hantavirus pulmonary syndrome</td>
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<tr>
<td>4. Pathogens with reservoirs of both wild and domestic species</td>
<td>Example: avian influenza</td>
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<tr>
<td>5. Paramyxoviruses</td>
<td>Example: Hendra, Nipah</td>
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<tr>
<td>6. Filoviruses</td>
<td>Example: Ebola, Marburg</td>
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<tr>
<td>7. Coronaviruses</td>
<td>Example: SARS, MERS, COVID-19</td>
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</tr>
</tbody>
</table>

Direct Drivers:
- Land-use change
- Agricultural intensification
- Exploitation of wildlife
- Climate change
- Wild animal hunting, butchering, and consumption
1. DRIVERS

Indirect Drivers
- Governance
- Sociocultural: Food Consumption and Diets

Direct Drivers
- Land-use Change/Agriculture
- Direct Exploitation of Wildlife

Climate Change
Other Drivers

Driver Interactions

2. HUMAN-DOMINATED SYSTEMS

4. EXPOSURE TO ZOONOSES

3. NATURE-DOMINATED SYSTEMS

5. VULNERABILITIES

6. PROBABILITY OF DISEASE EMERGENCE
What drives novel emerging infectious diseases

Wildlife exploitation

Agricultural intensification

Land-use change
Leverage points for addressing Covid-19 and future zoonotic pandemics

Leverage Point 1: Limit potential for virus amplification and cross-species transmission in permanent live animal markets

Leverage Point 2: Reduce consumption of taxa with a high risk for transmitting zoonotic disease

Leverage Point 3: Strengthen early warning systems for emerging zoonotic disease

Leverage Point 4: Re-engineer production systems and supply chains

Leverage Point 5: Strengthen public trust in institutions

Leverage Point 6: Foster transparency and evidence-informed policy

Leverage Point 7: Re-examine major conservation interventions with a zoonotic EID lens
Taking a corruption lens: Examining potential risks and unintended consequences of rushed interventions

Risk 1: Legal closure of wildlife animal markets creates new illegal trade

Risk 2: Policy interventions to reduce wild meat consumption lead to rapid agricultural expansion

Risk 3: Rapid expansion of livestock production increases exposure to other novel or endemic zoonotic EIDs

Risk 4: Indiscriminate bans on wild meat trade and consumption reduce dietary protein to marginalized communities, leading to micronutrient deficiencies and growth disorders

Risk 5: Role of conservation interventions in preventing future zoonotic EIDs is simplified or exaggerated, alienating support among local communities
An estimated $95 trillion will be invested in infrastructure by 2030.
Deforestation of the Amazon has soared under cover of the coronavirus

Logging and mining operations have accelerated their destruction of sizable patches of the Amazon rainforest during the coronavirus pandemic, according to an NBC News analysis of satellite imagery captured by the European Space Agency.

Investigations of Covid-19 Related Corruption Point to R$1.07 Billion in Overspending

Seven state governments are affected. Since the end of April, there have been at least 18 operations throughout Brazil, five of which in the past week alone.
Understand the system within which decisions are made
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it

Dr. A. Alonso Aguirre
Professor and Department Chair, Environmental Science and Policy
George Mason University
The COVID-19 Pandemic Connects Human, Animal & Ecosystem Health

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Health connects all species
Globally, as of 1:38pm CEST, 20 June 2020, there have been 8,525,042 confirmed cases of COVID-19, including 456,973 deaths, reported to WHO.
The Claim: Since COVID19, environmental impact has decreased
• Air quality will revert to previous state
• Decline to 1.5-5%
• We need 10% a year
• Ground-level ozone has increased in China
Coronavirus: Empty streets around the world are attracting wildlife
Drivers of Disease Emergence

- Habitat Loss
- Wildlife Trade
- Exotic Species
- Pathogen Pollution
- Global Toxification
- Climate Change
“Human practices promote transmission of mutation-prone RNA viruses able to infect ‘multiple’ hosts…synergistically facilitating viral emergence”

Kreuder Johnson et al. 2015
SARS CORONAVIRUS-2 CAUSATIVE AGENT OF COVID19

- 1.6M viruses, half with zoonotic potential
- 162 (94%) RNA viruses, 28 times higher
- 95 viruses by human activity
  - 86 from wildlife
  - 32 from domestic animals
- 19,000 mammals
- 20 countries over five years
- 100 different coronaviruses, mostly from bats

Kreuder Johnson et al. 2015
Anthony et al. 2017

Rodrigues Fruit Bat, *Pteropus rodricensis*
San Diego Zoo

image credit: istockphoto.com/Maksim Tkachenko
• 217 known viruses
• 949 novel viruses detected (i.e. Bombali ebolavirus, Zaire ebolavirus, Marburg virus, and MERS- and SARS-related coronaviruses)
• 60% from Asia; 40% from Africa and 7% from Latin America
• Most of these viruses came from bats (43%), non-human primates (23%), and rodents (14%)
COVID-19 is 79.5% to SARS-CoV
96% identical to a horseshoe bat coronavirus
Bats, natural reservoir? 245/630 (39%) sequences
Yunnan province, China - Myanmar, Lao PDR, Vietnam?

Latinne et al. 2020; Zhou et al. 2020
COVID19 in Other Species

Cats, dogs, tigers, lions, hamsters, ferrets, and macaques, rabbits, common marmosets
Reverse Zoonosis or Zooanthroponosis

• Spillover & Spillback
• First case of reversed zoonosis: humans to animals
• Two farm workers infected by mink
• Response occurs after spillover has occurred

• Gaps in authority and weak institutional capacity

• Each discipline responds once outbreak is in their sector

• Collaboration across sectors can identify critical transmission risks and potential solutions
Towards Understanding EIDs

Forest  Agro  Rural  Semi-Urban  Urban
We Need to Move Beyond the Brand

- Conservation Medicine
- Ecological Medicine
- Environmental Medicine
- Medical Geology

- EcoHealth
- One Health
- Planetary Health
- GeoHealth...
The Least Understood 1/3 of the Pie

- Human Health
- Animal/Plant Health
- Ecosystem Health
Towards Understanding EIDs
Future Trends: Expect More Pandemics

- Globalization
- Expansion into wildlife habitats
- Illegal wildlife trade
- Urbanization & agriculture
- Fisheries & fish farming
- New wildlife-human conflicts
- Climate Change
• We choose to avoid change
• Food supply, poverty & corruption must be addressed
• Some wildlife declines (hunting, habitat loss & disease) linked to lack of law enforcement and corruption
• Prevention is key by strengthening transdisciplinary collaborations, integrative research and capacity building

Monroe & Willcox 2006
NewsRx Health & Science; Atlanta 2015
Wilcox, Aguirre et al. 2019

Cusack, Financial Crime 2020
Transdisciplinary process for building adaptive capacity

a) General schema

INTRODUCTION

PROBLEM ORIENTATION

ADAPTATION

Wilcox, Aguirre et al. 2019

b) Sequence of tasks

Transdisciplinarity

1. Recognition of a new problem
2. Formation of an interdisciplinary team
3. Analysis of the problem with the affected community & stakeholders
4. Development of a common vision and language

Systems thinking

5. Identification of boundaries & scales of the SES
6. Description of the ecological & social systems and their interconnections
7. Contextualization of the problem

Adaptive management

8. Reformulation of the transdisciplinary team according to the problem
9. Description of research questions & their treatment
10. Conducting research
11. Analysis and interpretation of results
12. Analysis of intervention options
13. Design of interventions
14. Identification indicator framework for monitoring
15. Implementation
16. Monitoring effects
“MEDICS HAVE CONVINCED HALF OF THE POPULATION TO WEAR MASKS. NOW VETERINARIANS NEED TO CONVINCE THE OTHER HALF!”

Modified from Mafalda (quino)
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it

Steve Broad
Executive Director
TRAFFIC
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it

WILDLIFE TRADE AND ZOONOTIC DISEASE: THE PROBLEMS AND THE REMEDIES
TRAFFIC
the wildlife trade monitoring network
Understanding wildlife trade

- Diverse global business: from forest and fisheries products to wild meat, live plants and animals and products such as skins, ivory and herbal medicines

- Complicated patterns of supply (wild and farmed) to local and international trade and markets – evolving with the globalized economy

- Most trade legal, but major problems of crime, corruption and illicit trade

- Main policy responses driven by conservation concerns about over-exploitation of species
Wildlife trade regulation

• Extent and scope of regulation built up since 1960s, largely to address concerns of over-exploitation of wild animals and plants

• CITES provides a policy umbrella and a basis for international cooperation

• Legal measures under national jurisdiction

• Major constraints:
  • Conflicting policies
  • Low resource allocation
  • Weak compliance pressure
  • Inconsistent enforcement
  • Relatively low risk for offenders
  • Corruption
Illegal wildlife trade

• Wildlife commerce in contravention of some relevant legal provision.

• Such provisions could include legislation and/or regulations related to one or more policy concerns: e.g. resource ownership or access rights; nature conservation; human or animal health protection; animal welfare; taxation or other fiscal provisions.

• Some components, but by no means all, illegal wildlife trade is driven by organised crime
Wildlife trade and zoonotic disease

- Movement of live specimens, mixing in trade, transport and markets: wild animals, domesticated animals and people – consumption of meat and other products

- Disease risk of animals under stress

- Pathways could be legal or illegal – in fact past zoonotic disease outbreaks often derive from legal wildlife markets and farms

- Illegal trade brings additional risks of avoidance of health controls and inspection – trade out of sight
Why corruption matters

- Both conservation and health concerns related to wildlife trade are addressed by a range of regulatory measures.

- As for other regulated valuable trade sectors, illicit business thrives on the boundaries of and outside the law.

- Corruption facilitates illegal wildlife trade and blurs the boundaries between legal and illegal markets.
Caviar trade example

Corruption undermines regulatory systems at every step along the trade chain.
Conservation and health controls

- Many countries have live animal quarantine requirements and other rules governing the cross-border movement of meat, fish and other animal products.

- Production, trade and use of live animals and products are subject to animal and human health regulations within domestic markets of most countries.

- These measures are typically designed primarily to address trade and consumption of domesticated species, the volume and value of which vastly exceed wild animal business.

- They are seldom tailored to the specific dynamics and risks of the trade in wild animals.
1. Understanding risks: what aspects of trade linked to zoonotic disease? Local and international – and possible trends?

2. Mapping risks: species, markets, transport hubs, trade practices and illegal flows

3. Understanding risk management options: current conservation animal and public health regimes, gaps and opportunities

4. Solutions: integrated approach: public health, animal health conservation: build on good practice such as seafood traceability and sanitary controls
Integrating responses to corruption

• If regulatory responses are to be effective, corruption vulnerability needs to be an overt consideration in risk assessment and mitigation.

• A holistic view of risks and potential harms in relation to conservation and health will help demonstrate the case for action.
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it

John M. Sellar OBE
Anti-Smuggling, Fraud and Organized Crime Consultant
Post-Pandemic Policing

What are we expecting?
Who will do it?
Who will ‘police’ wildlife markets?
Who will ‘police’ food markets?
Border control limitations

• Customs already overwhelmed
• Half of all Customs agencies focussed on revenue-gathering
• What will post-pandemic targets be:
  – Health?
  – Smuggling?
  – Security/Terrorism?
What will be the legal basis?

- Requires Parties to penalize not *criminalize* violations
- Does not regulate domestic trade
- Does not address post-import use of App II fauna and flora
- Little relevance to animal health or welfare
- Is a trade treaty, with conservation as its goal
- Complex procedures to amend text of the Convention – one major amendment took 33 years to come into effect
UN Convention against Transnational Organized Crime

• Is there a desire for a 4th Protocol?
• What should it address?
• What would the added value be?
• How long would it take to come into effect?
• Is UNTOC’s effectiveness already questionable?
Will COVID-19 make a difference?

• Tiger and rhino demand has never disappeared
• Rhino demand has increased and demand has diversified
• Pangolin demand ever-present
• Massive, long-held cultural and traditional influences upon demand
• Some wildlife consumption viewed as having positive benefits for human health
COVID and Crime

- Lockdowns have reduced some crime types
- Smuggling methods have adapted
- Public may have experienced and witnessed less crime, but ‘hidden’ crime is ongoing and perhaps increasing
- Pandemic circumstances and impacts readily-exploitable by Organized Crime Groups
- Public awareness of OCG involvement probably low
- ‘Black Lives Matter’ protests and concerns may inhibit some aspects of potential discussions on law enforcement
Target corruption more actively and innovatively...

Much of illicit trade, crime and trafficking is facilitated by corruption.
Need to investigate such activities as crimes of corruption.
Exploit anti-corruption legislation and its extensive powers for:
  - accessing bank accounts and financial records
  - intercepting communications
  - surveillance – electronic and human
  - ‘sting’ operations
  - witness protection

Remember – corruption is not a one-way street. The corrupters deserve just as much attention as the corrupt.
Global perspectives, reactions and collaborations

- Intergovernmental organizations – positive
- Law enforcement - positive
- NGOs – positive
- Academia, researchers and scientists – positive
- Governments – very mixed
- Difficult to predict, post-pandemic
What should our focus be?

- Effectively-regulated, sustainable trade
- Conservation – of the planet and its species
- Human health
- Closing opportunities to OCGs
- Combating corruption
- A one-world approach – to a better world

Which of these deserves priority, if any?
Determining roles and priorities

• Law enforcement deals with crime *not* trade
• Law enforcement deals with humans *not* animals
• The primary role for law enforcers is to preserve human life
• The No. 1 priority for criminal investigators is human homicide
• Illicit wildlife trade destroys more than just fauna and flora species
• Illicit trade *kills* humans
Illegal wildlife markets, zoonotic disease transfer and corruption—Connections and what the global community must do about it
Targeting Natural Resource Corruption

Harnessing knowledge, generating evidence, and supporting innovative policy and practice for more effective anti-corruption programming

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