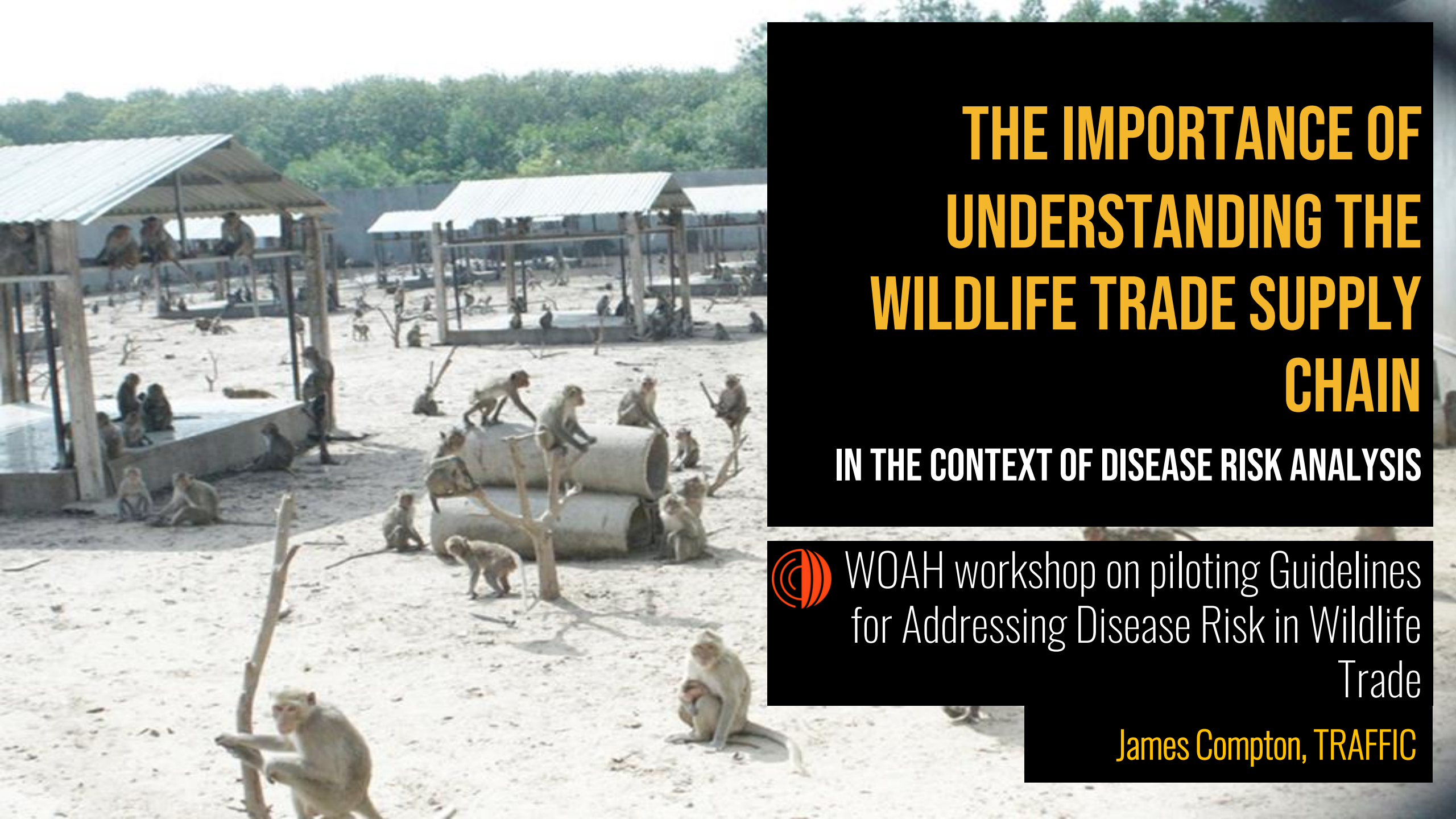


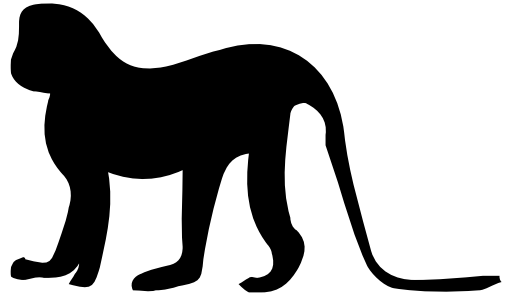
THE IMPORTANCE OF UNDERSTANDING THE WILDLIFE TRADE SUPPLY CHAIN

IN THE CONTEXT OF DISEASE RISK ANALYSIS

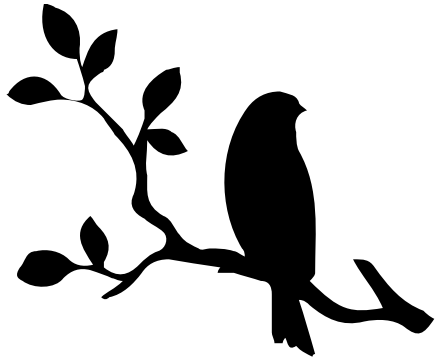
WOAH workshop on piloting Guidelines for Addressing Disease Risk in Wildlife Trade

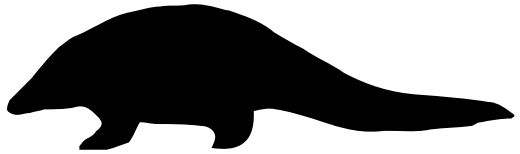
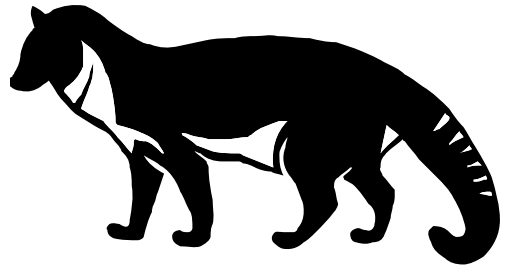
James Compton, TRAFFIC

OVERVIEW

1) Addressing Disease Risks in Wildlife Trade (WOAH Guidelines)
2) Mapping supply (value) chains – process and utility
3) Examples –working systems for disease and wildlife trade management
4) Understanding complexity – mapping stakeholders, human-animal interfaces and trade flows
5) Exercise to visualize a supply chain map



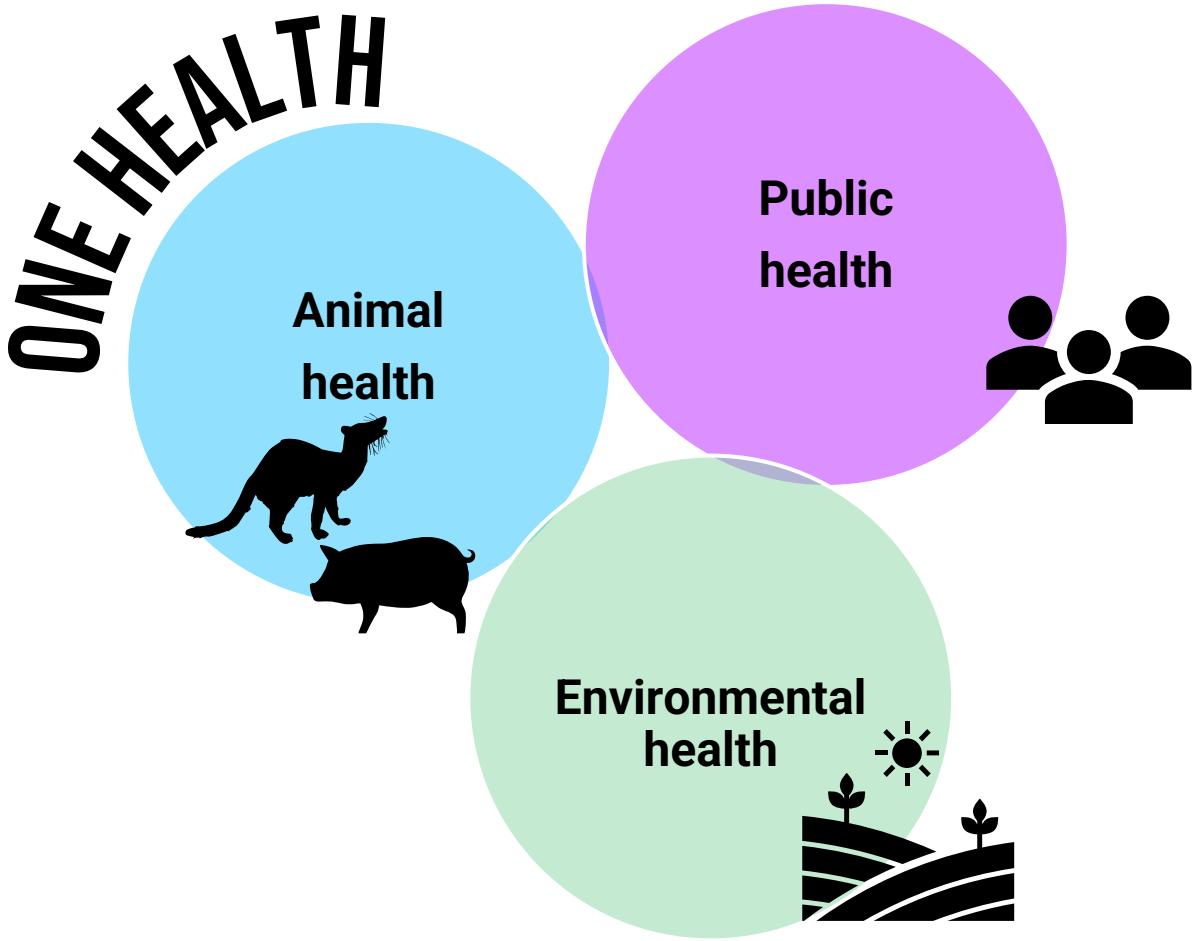



TRAFFIC the wildlife trade monitoring network | USAID FROM THE AMERICAN PEOPLE | IUCN

THE WILDLIFE TRAPS PROJECT

Leveraging TRAFFIC's wildlife trade expertise in partnership with health experts

WHERE WILD ANIMAL TRADE TAKES PLACE, RISKS SHOULD BE CLOSELY MONITORED TO ENSURE LEGALITY AND IMPROVE SUSTAINABILITY AND SAFETY.

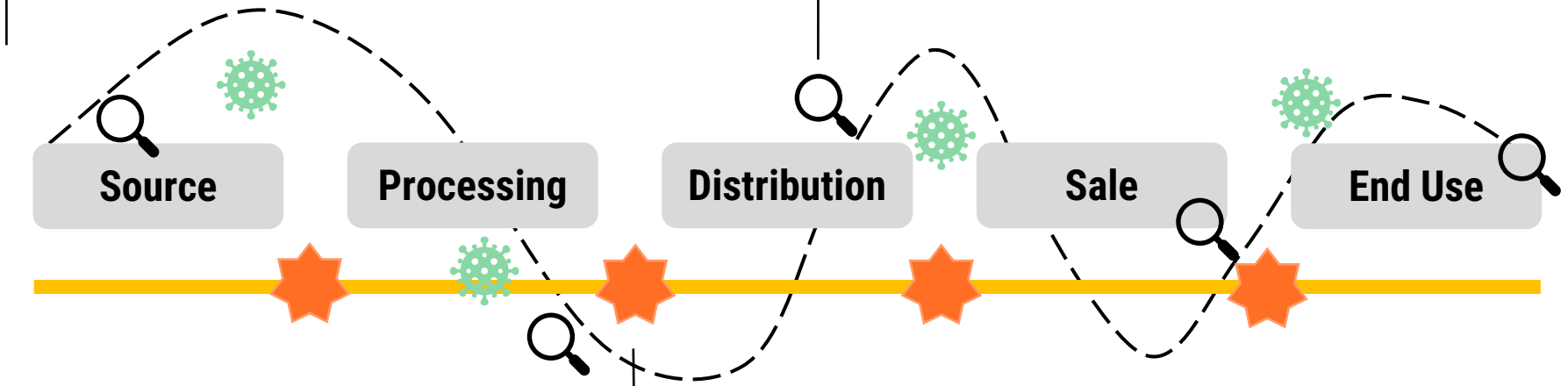


DEFINITIONS AND STRUCTURE

For more information:
Crossing the language barrier: a wildlife trade and zoonotic disease lexicon

Wildlife Supply/Value Chain: The entire stream from harvest (farming in some cases) to processing of a wildlife or other product until it reaches the ultimate end-user.

Traceability: Information capture about where, how, and under what regulatory conditions wildlife is produced and moves along the chain



Hazard: An agent (physical, chemical, or biological) with the potential to cause adverse health effects.

Risk: The estimated probability and severity of adverse health effects following the exposure to a hazard.

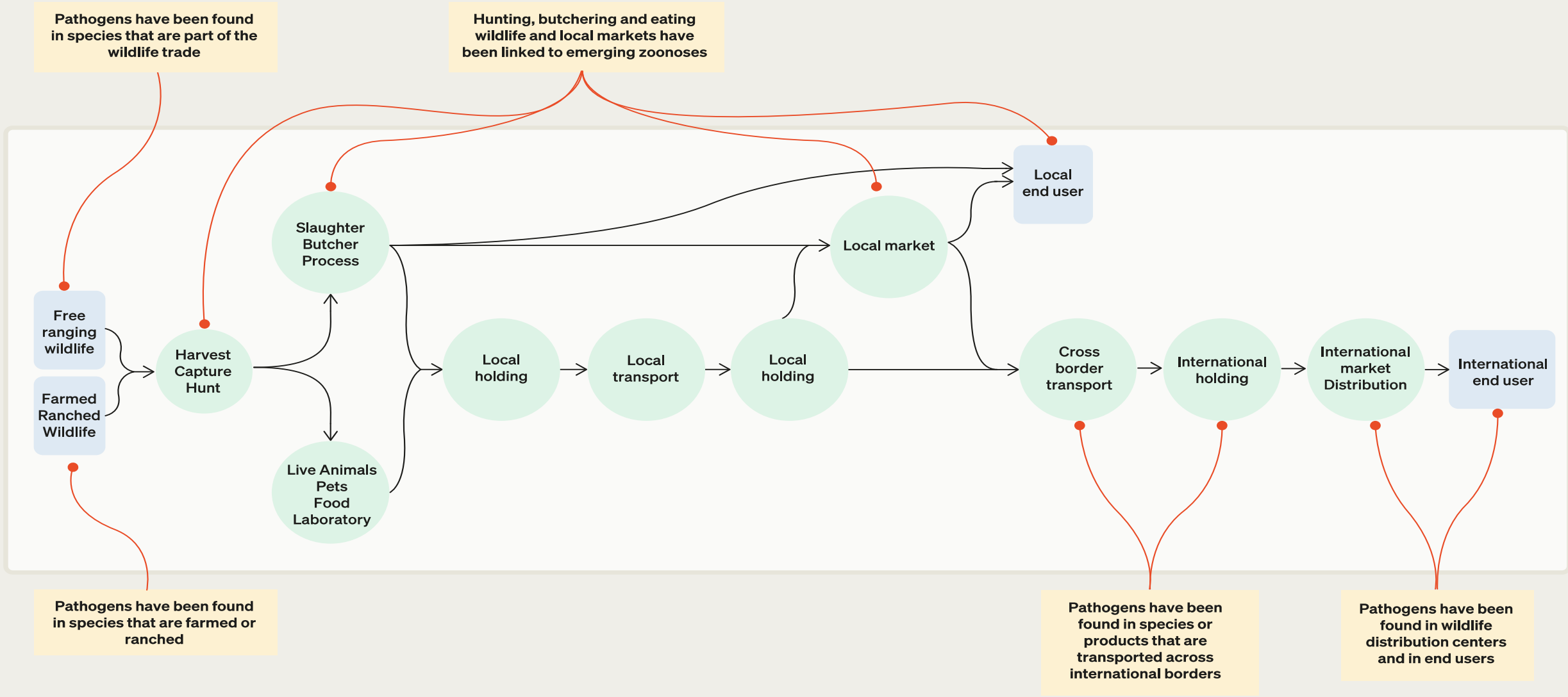
Critical Control Point: A step at which control can be applied and is essential to prevent or eliminate a hazard or reduce risk to an acceptable level.

WOAH Ad Hoc Group has developed *Guidelines for addressing disease risks in wildlife trade*

Acknowledging

World Organisation for Animal Health
Founded as OIE

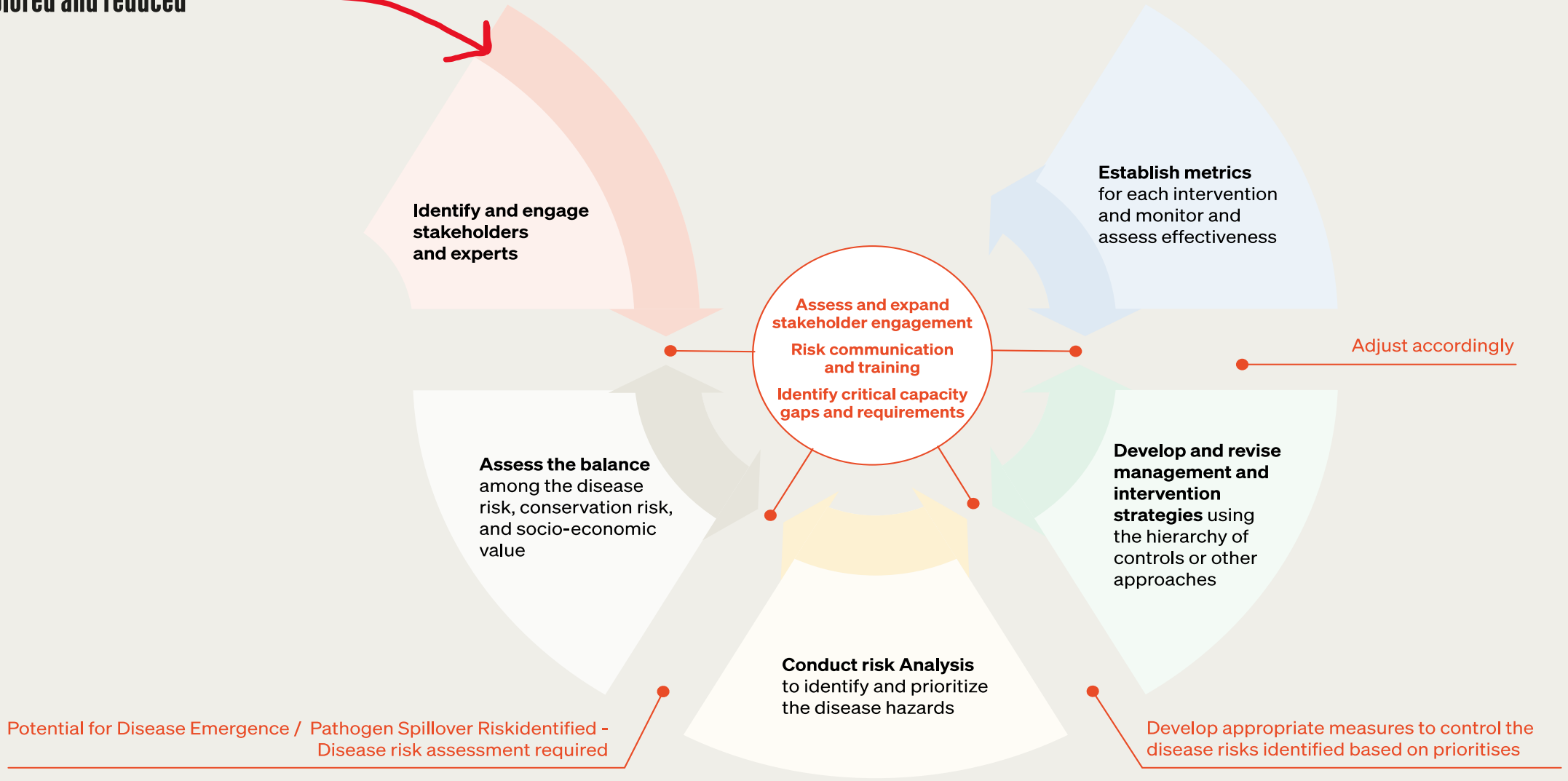
Generic Wildlife Trade Supply Chain



Generic Wildlife Trade Supply Chain [Credit Dr. John Berezowki, adapted from Stephen C, Berezowski J et al. 2021 Rapid Review of Evidence on Managing the Risk of Emerging Diseases in the Wildlife Trade. Prepared for the Preparedness and Resilience Department.

Addressing disease risks in wildlife trade

Identify a wildlife trade supply chain or interface for which disease risks are to be explored and reduced



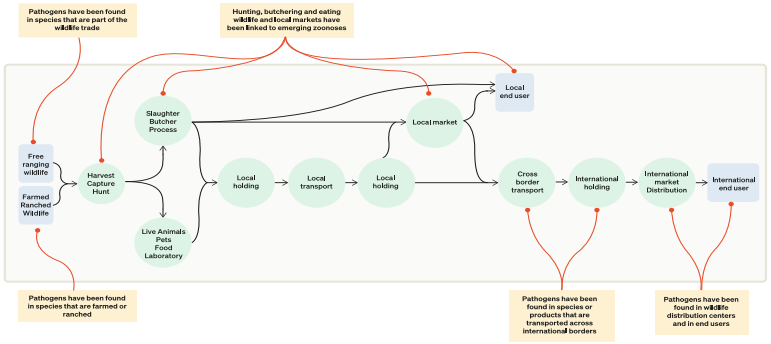
Risk Analysis

List of factors to consider

- Taxa in Trade
- Inter-species contact and densities
- Type of wildlife trade chain
- Practices and human behaviours
- Human-animal contact
- Policy/Regulation framework
- Government capacity

MAPPING THE SUPPLY CHAIN

Process and Utility



Process

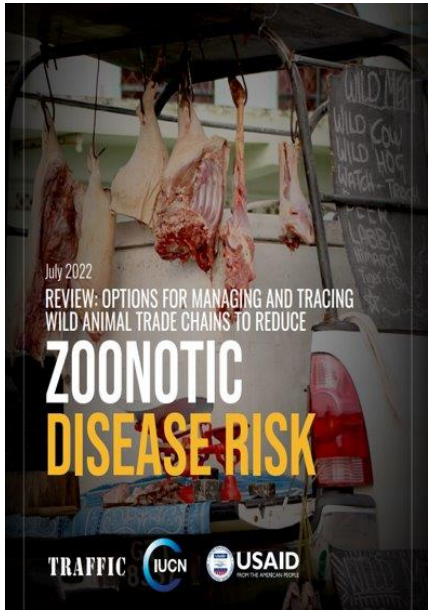
- Expert **consultation** (augmented by site-visits where possible)
- Visualize a '**geography**' of trade chain connections
- Identify **actors**, **human-animal interfaces** and **practices**
- Understand how traded wild animals are being **held**, **moved**, **processed** and **sold** from source to end-use

Utility

- Layers of information viewed in parallel
- Stakeholders can 'see themselves' in roles and responsibilities
- Helps describe the 'problem' – building block of risk assessment
- Can help locate points of potential risks, based on combination of factors

WORKING SYSTEMS

Wildlife trade and disease risk management



- **Kangaroo** Supply Chain (Australia)
  - Wild Harvesting
  - Domestic and International trade
- **Ostrich** Supply Chain (South Africa)
  - Closed-cycle captive farming
  - Domestic and International trade
- **Deer** (Venison) Supply Chain (France)
  - Mix of wild harvest and farmed (ranched) sources

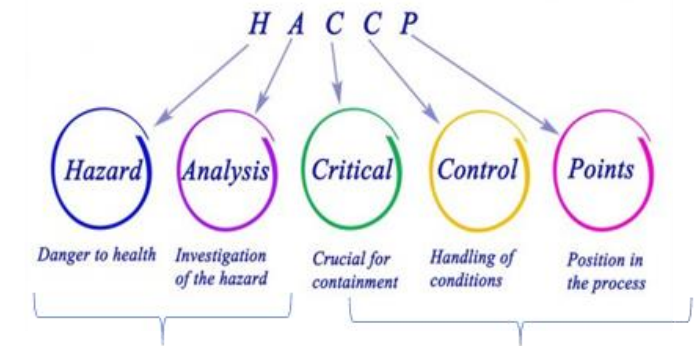
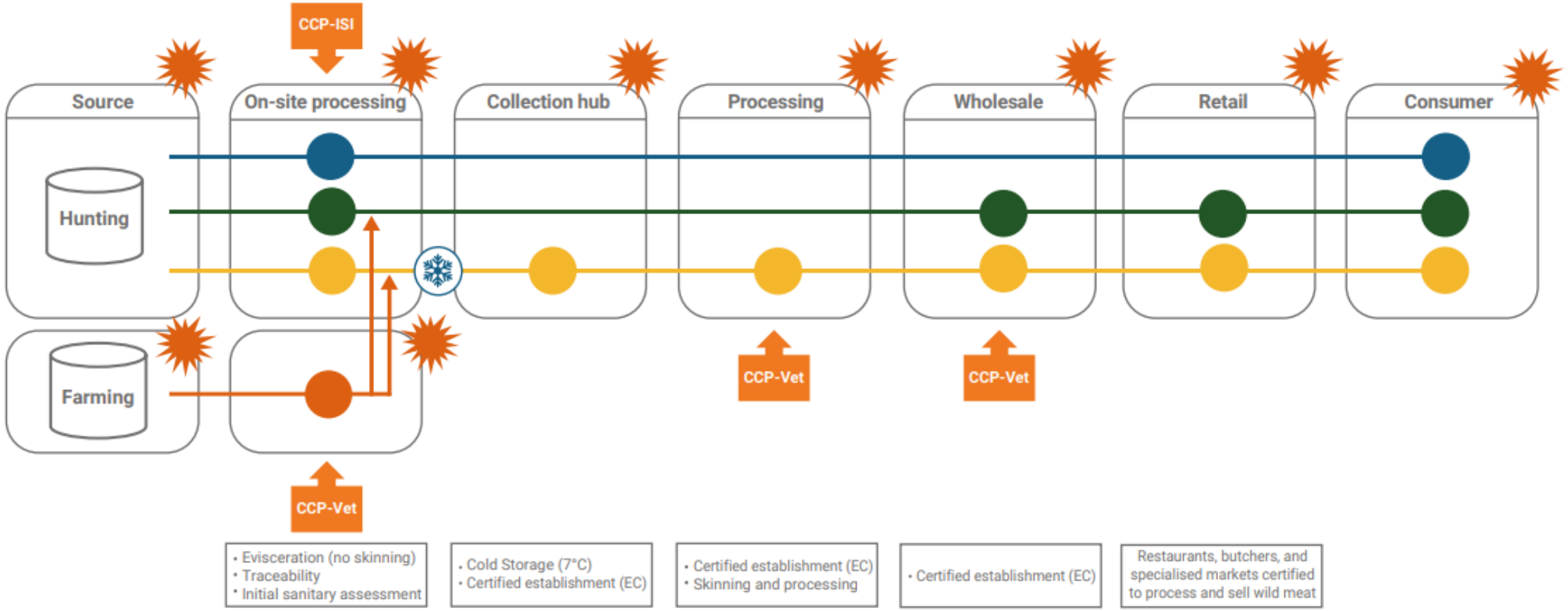


Diagram from Craig Stephen, presentation to OIE

VENISON [CERVID DEER] SUPPLY CHAINS IN FRANCE



KEY

- **Indicates a Critical Control Point: On-site initial sanitary inspection**
- **Indicates a Critical Control Point: By a certified veterinarian**
- **Hazard Point**
- **The carcass can be put in cold storage (7°C) on-site in case of delays**

The Short-Direct circuit

- Meat sold or consumed within 80 km from the hunting site (à vol d'oiseau)
- It refers to the consumption of game meat by local hunting association during events, donations or direct conferment, and direct sell by the hunting association or other certified body
- The maximum quantity is the same as the total number of hunted animals during the hunting session (i.e., a day).

The Short-Professional circuit

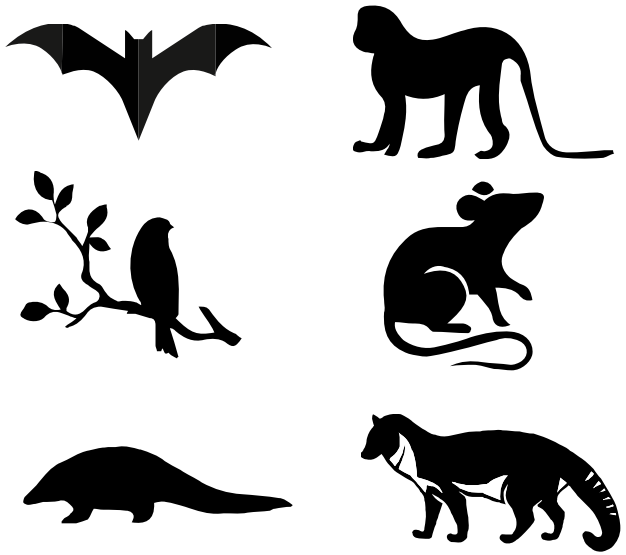
- Only one intermediary between the initial provider and the consumer.
- The intermediary has to be located less than 80 km from the hunting location in a straight line (à vol d'oiseau). It also needs to be certified to process (i.e., skin and cut) and sale wild meat. Usually butchers, charcutier, specialised supermarkets, among others.
- The maximum quantity is the same as the total number of hunted animals during the hunting session (i.e., a day).

The Long circuit

- Several intermediaries between the initial provider and the consumer.
- No distance or quantity limitations
- The intermediaries are certified to process (i.e., skin and cut) and sale wild meat. Usually regional abattoirs and food processing plants.

UNDERSTANDING COMPLEXITY

Wildlife Trade Chains - Example 1

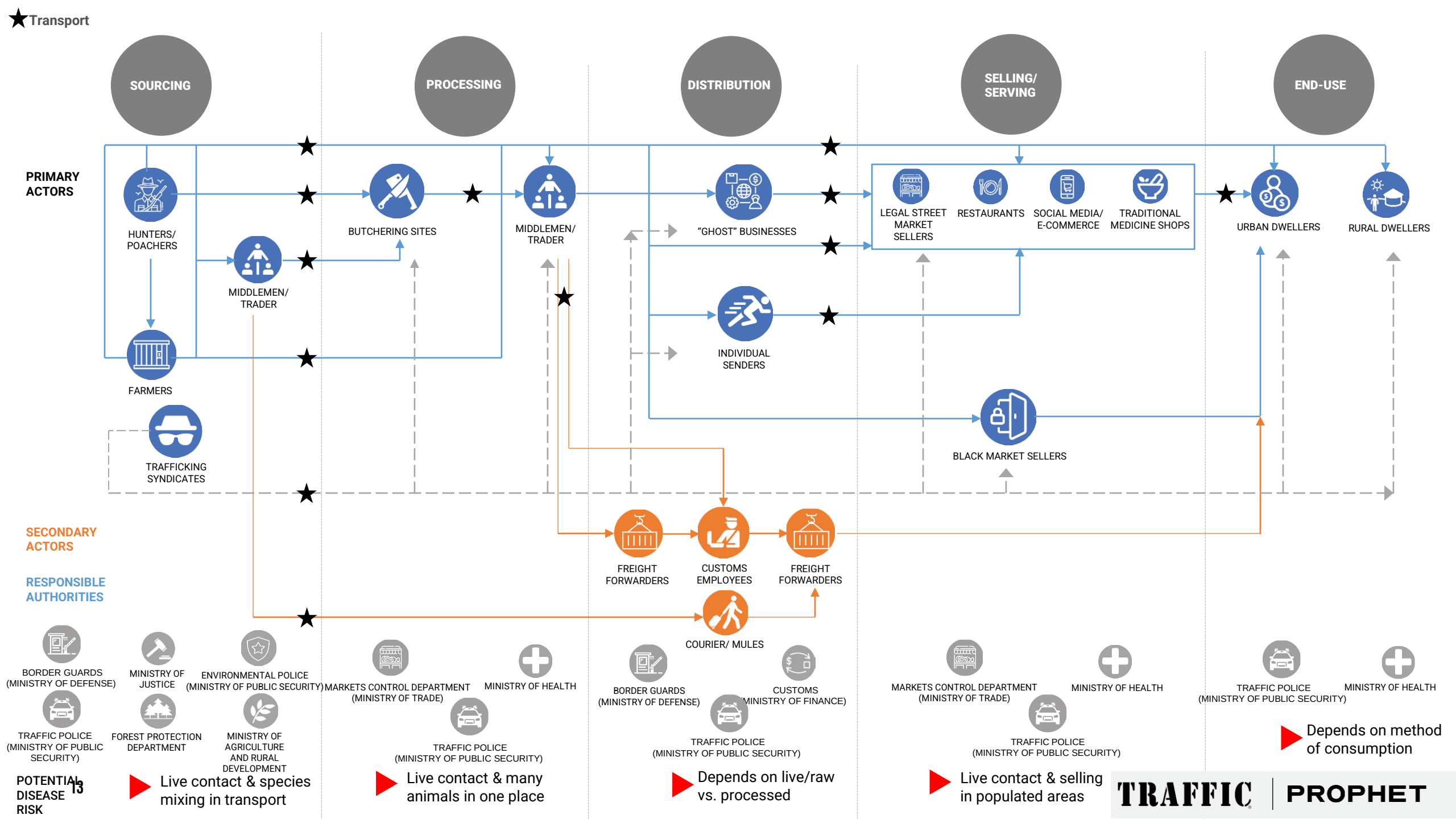


Wild animals **used for attributed health benefits** (food, [formal] traditional medicine, [informal] tonics)

- *Multiple mammal and bird taxa*
- *Both farmed and wild-harvested specimens, traded live and as wildlife products*
- *Mixture of legal and illegal elements*

Building up a **supply chain structure**

- *Expert elicitation process*
- *Define different phases from wild/farmed animal to end-use*
- *Describe primary/secondary actors and trade pathways*
- *Identify location of human-animal interfaces and practices (e.g., capture, handling, slaughter, transport, processing, sale)*



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UNDERSTANDING COMPLEXITY

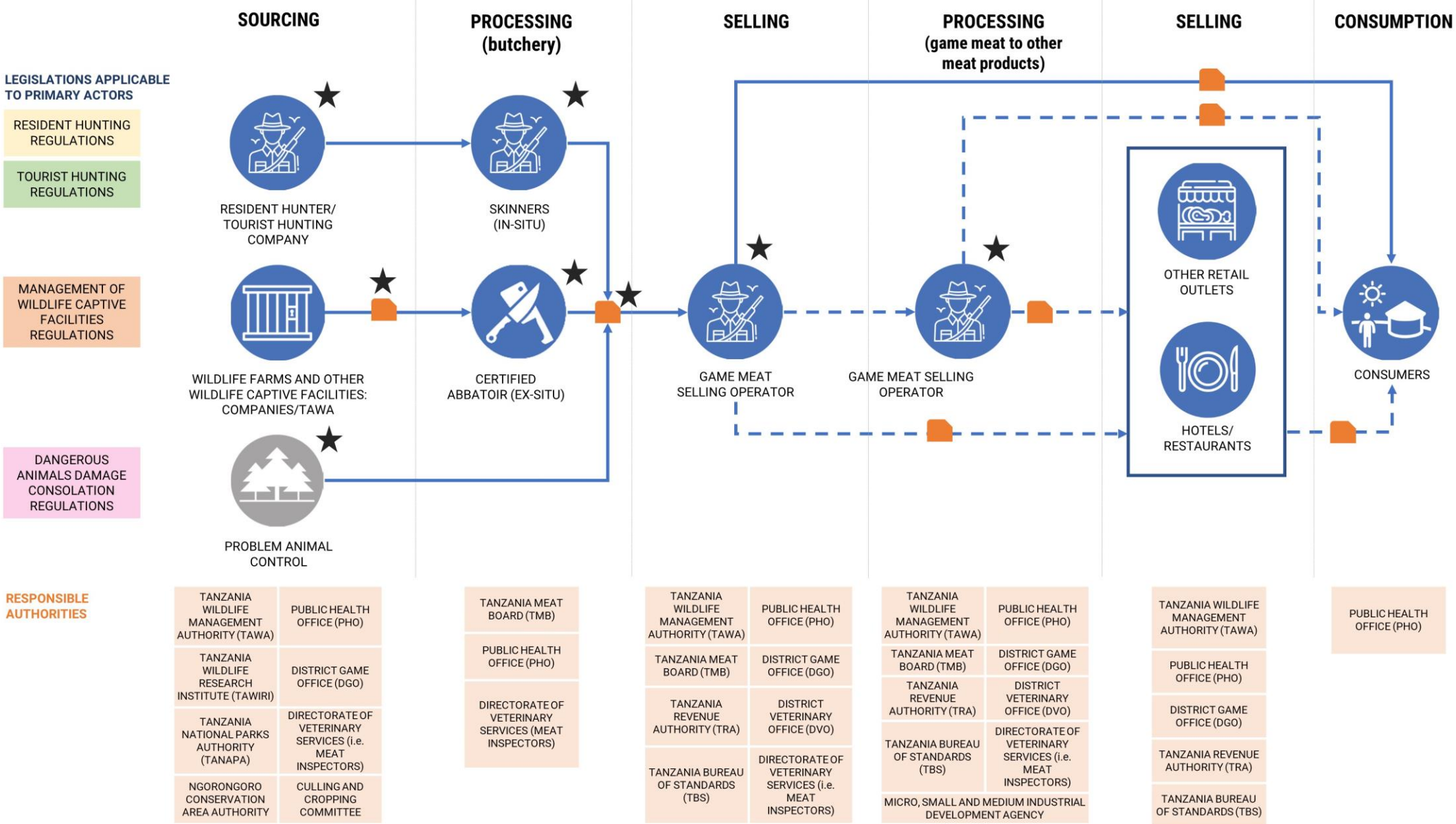
Wildlife Trade Chains - Example 2

Wild harvested animals used for **food** (legal game meat industry)

- *Multiple mammal taxa, all wild-harvested*
- *Mostly killed/butchered in the wild before transport*
- *Illegal bushmeat trade running in parallel*

Building up a supply chain structure

- *Site observations, expert interviews and multi-sectoral workshops*
- *Define different phases from wild harvested animal to end-use*
- *Describe primary/secondary actors and trade pathways*
- *Identify location of human-animal interfaces and practices (e.g., capture, handling, slaughter, transport, processing)*


SOURCING
PROCESSING (butchery)
SELLING
PROCESSING (game meat to other meat products)
SELLING
CONSUMPTION
LEGISLATIONS APPLICABLE TO PRIMARY ACTORS
RESIDENT HUNTING REGULATIONS
TOURIST HUNTING REGULATIONS
MANAGEMENT OF WILDLIFE CAPTIVE FACILITIES REGULATIONS
DANGEROUS ANIMALS DAMAGE CONSOLATION REGULATIONS
RESIDENT HUNTER/ TOURIST HUNTING COMPANY
SKINNERS (IN-SITU)
WILDLIFE FARMS AND OTHER WILDLIFE CAPTIVE FACILITIES: COMPANIES/TAWA
CERTIFIED ABBATOIR (EX-SITU)
PROBLEM ANIMAL CONTROL
GAME MEAT SELLING OPERATOR
GAME MEAT SELLING OPERATOR
OTHER RETAIL OUTLETS
HOTELS/ RESTAURANTS
CONSUMERS
RESPONSIBLE AUTHORITIES
TANZANIA WILDLIFE MANAGEMENT AUTHORITY (TAWA)
PUBLIC HEALTH OFFICE (PHO)
TANZANIA WILDLIFE RESEARCH INSTITUTE (TAWIRI)
DISTRICT GAME OFFICE (DGO)
TANZANIA NATIONAL PARKS AUTHORITY (TANAPA)
DIRECTORATE OF VETERINARY SERVICES (i.e. MEAT INSPECTORS)
NGORONGORO CONSERVATION AREA AUTHORITY
CULLING AND CROPPING COMMITTEE
TANZANIA MEAT BOARD (TMB)
PUBLIC HEALTH OFFICE (PHO)
DIRECTORATE OF VETERINARY SERVICES (MEAT INSPECTORS)
TANZANIA WILDLIFE MANAGEMENT AUTHORITY (TAWA)
PUBLIC HEALTH OFFICE (PHO)
TANZANIA MEAT BOARD (TMB)
DISTRICT GAME OFFICE (DGO)
TANZANIA REVENUE AUTHORITY (TRA)
DISTRICT VETERINARY OFFICE (DVO)
TANZANIA BUREAU OF STANDARDS (TBS)
DIRECTORATE OF VETERINARY SERVICES (i.e. MEAT INSPECTORS)
TANZANIA WILDLIFE MANAGEMENT AUTHORITY (TAWA)
PUBLIC HEALTH OFFICE (PHO)
TANZANIA MEAT BOARD (TMB)
DISTRICT GAME OFFICE (DGO)
TANZANIA REVENUE AUTHORITY (TRA)
DISTRICT VETERINARY OFFICE (DVO)
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DIRECTORATE OF VETERINARY SERVICES (i.e. MEAT INSPECTORS)
MICRO, SMALL AND MEDIUM INDUSTRIAL DEVELOPMENT AGENCY
TANZANIA WILDLIFE MANAGEMENT AUTHORITY (TAWA)
PUBLIC HEALTH OFFICE (PHO)
DISTRICT GAME OFFICE (DGO)
TANZANIA REVENUE AUTHORITY (TRA)
TANZANIA BUREAU OF STANDARDS (TBS)
PUBLIC HEALTH OFFICE (PHO)
NOTES
Transport
Pathways not mentioned in the Game Meat Selling Regulations
Critical control point: Points where regulatory checks are needed to ensure meat/food safety

UNDERSTANDING COMPLEXITY

Wildlife Trade Chains - Example 3

Farmed macaques traded **live for biomedical research**

- *Single taxa* – Macaca fascicularis
- *Mostly exported to the US and Europe*
- *Some live specimens traded domestically*

Building up a **supply chain structure**

- *Site-based observations, expert interviews*
- *Define different phases from farmed animal to export*
- *Describe primary/secondary actors and trade pathways*
- *Identify location of human-animal interfaces and practices (e.g., capture, handling, holding facilities, transport, testing)*
- *Compile list of responsible government agencies to understand jurisdictions*

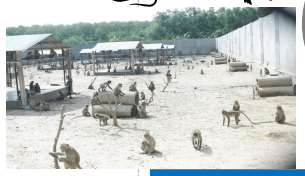
SOURCING

FARMING / RANCHING

DISTRIBUTION

HOLDING / EXPORT

IMPORT / END-USE



= Transport interface

International exchanges with farms

Wild sourced individuals

Port / Border

Animal Quarantine

Macaque Farm (Semi-wild enclosures)

Farm registered for export

Farm for 'domestic market'

Animal Quarantine (between farms)

Farm registered for export

Animal Quarantine prior to leaving export farm

Freight forwarder and transport to point of export

Animal Quarantine prior to export

Port / Border

Animal Quarantine at point of import

Foreign Biomedical Research Facility

Disease screening – biological sampling for pre-export veterinary health check

- Data management for disease screening results
- Decision tree – what happens to any infected wild specimen?

Customs

CITES Management and Scientific Authorities

Forest Department

Provincial Authorities (wildlife, forest, animal health)

Department of Animal (Livestock) Health

Department of Animal (Livestock) Health

CITES MA and SA

Customs

FURTHER STEPS

- **Consultation** on taxa, hazards, risks and mitigation
  - Bring multiple agencies and stakeholders together
- Use supply chain map as **visual reference for follow-up** and agreeing responsibility for **governance and action**
- Continue to **add information** as Risk Analysis process continues
- Prioritize and design **targeted mitigation measures**

SUPPLY CHAIN MAPPING – GROUP EXERCISE

Group focus on **supply chains involving Thailand**
Three end-use types: 1) **meat/food**; 2) **live pets**; 3) **live for biomedical research**

- *May be legal or illegal, or a mix of both*
- *May involve live specimen movements or transition into (semi-)processed products such as meat or body parts*
- *May have sub-national, national and international elements*

Build a **map of the supply chain**, starting from source through to end use, identifying:

- *Stakeholders and/or actors*
- *Human/animal interfaces, including points of holding/keeping of live specimens, transport, slaughter/processing, sale, and end-use*
- *Trade pathways and directional flows*

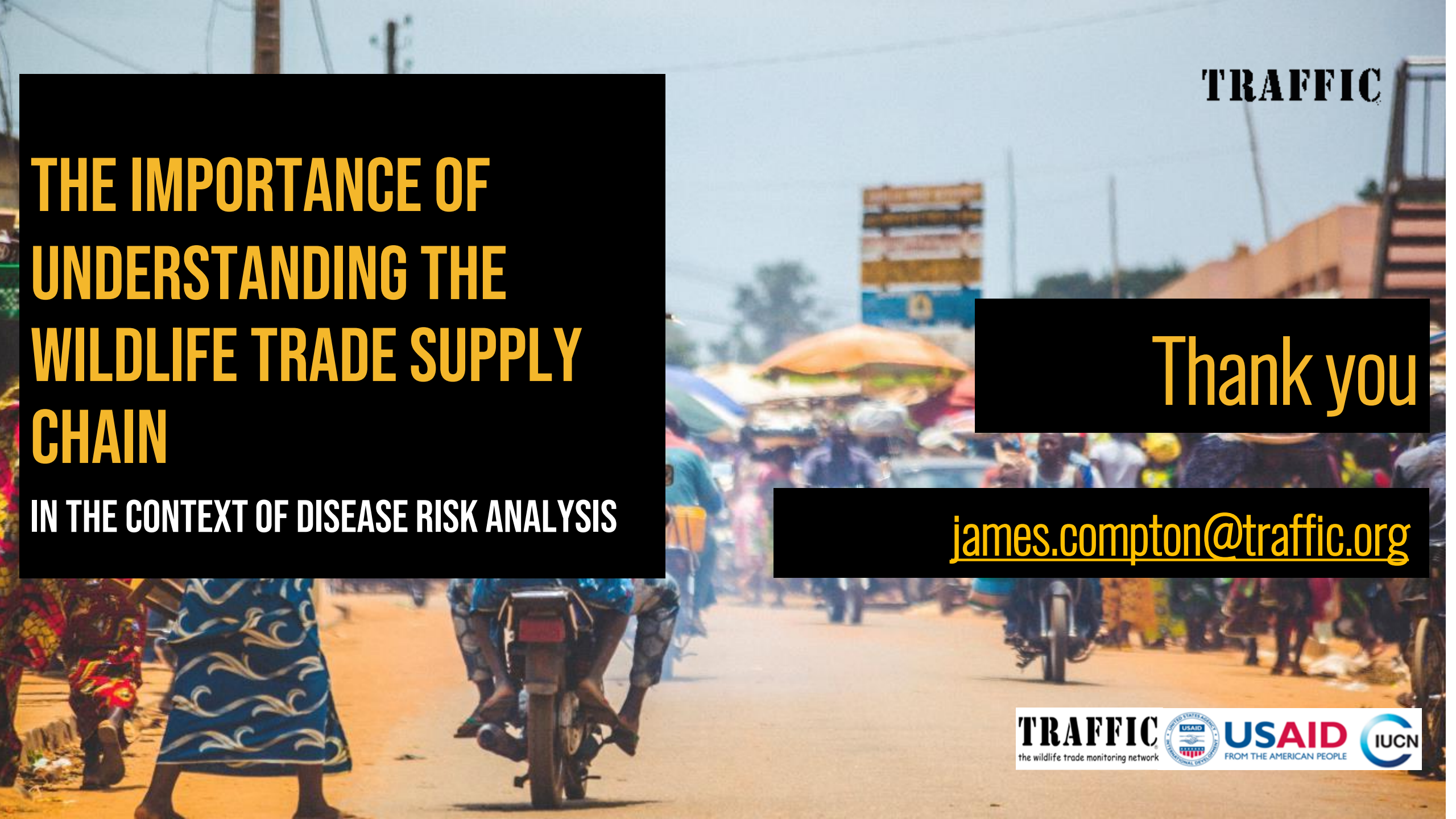
SOURCING

PROCESSING

DISTRIBUTION

RETAIL

END-USE



THE IMPORTANCE OF UNDERSTANDING THE WILDLIFE TRADE SUPPLY CHAIN

IN THE CONTEXT OF DISEASE RISK ANALYSIS

Thank you

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