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OHARA

One Health Approach to
Risk Assessment in Canada

NCCEH Webinar

December 6, 2023

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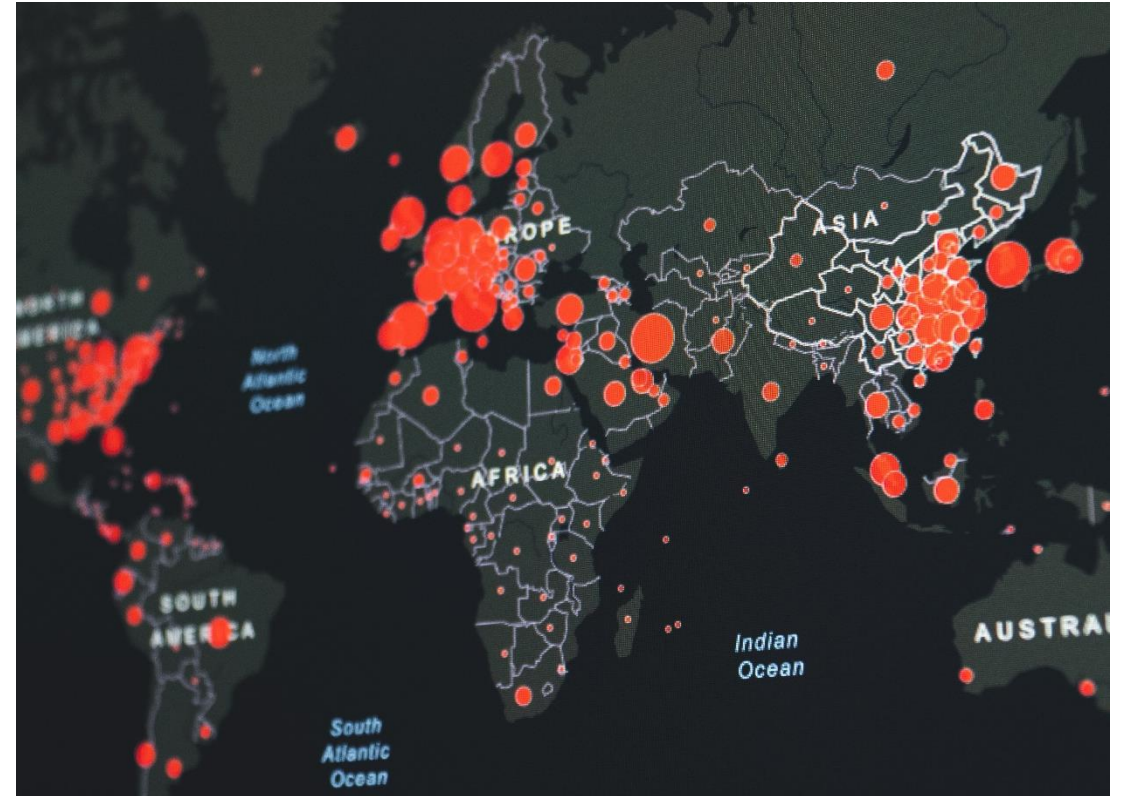
1. Background
2. One Health and Risk Assessment Scope
3. OHARA Initiative
4. Environmental Focus Session
5. Lessons Learned
6. Next Steps

Background

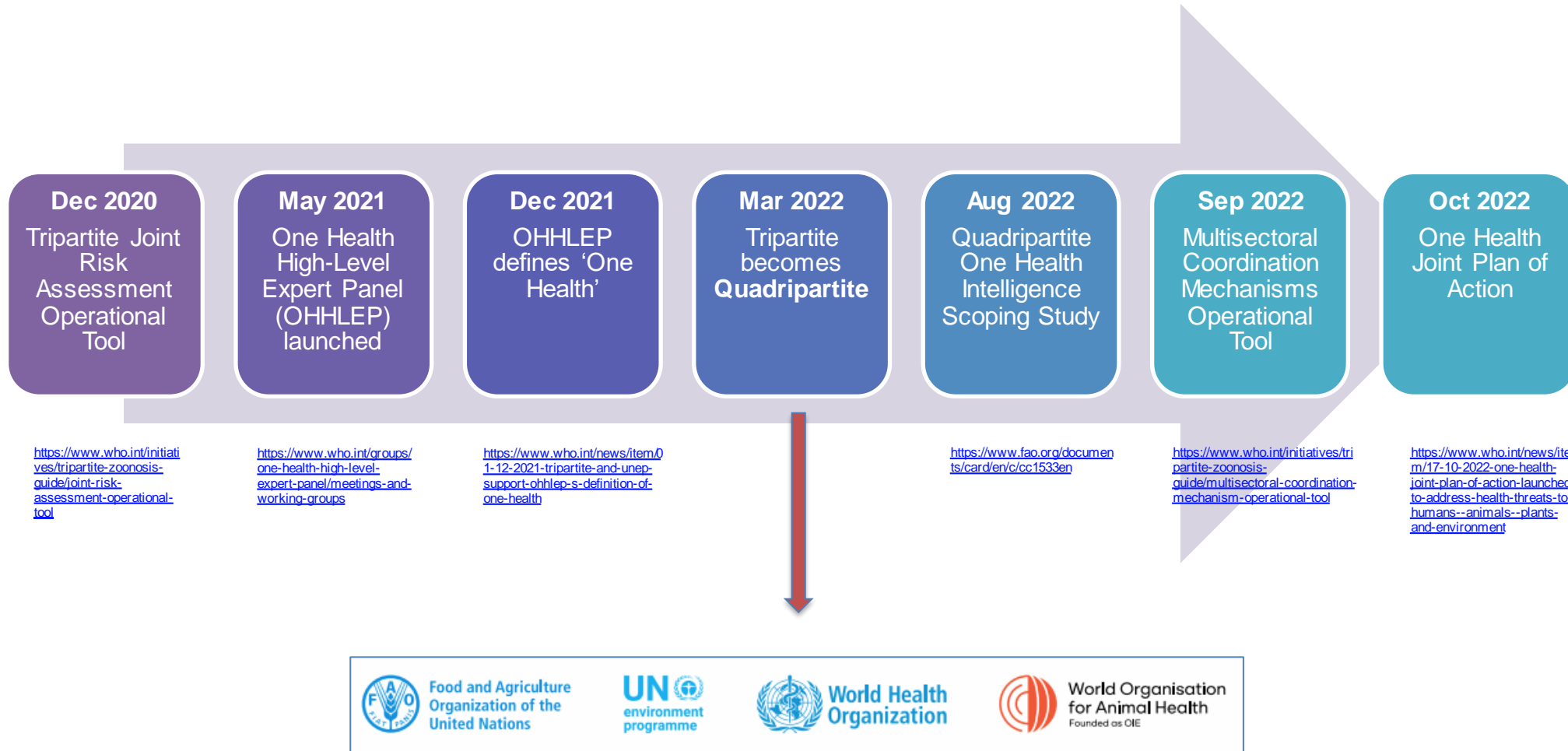
The Need

Canada needs the capability for early detection, understanding and action to address emerging human-animal-environmental health threats.

We must not only identify, but also **ASSESS** threats to global health security, in order to enable prompt and effective action to reduce their potential wide-reaching impact.



International Activities on One Health



One Health Joint Plan of Action (JPA)

Released by the Quadripartite, 2022:

- Food and Agriculture Organization
- United Nations Environment Programme
- World Health Organization
- World Organisation for Animal Health

Action track 6 = Integrating the Environment into One Health

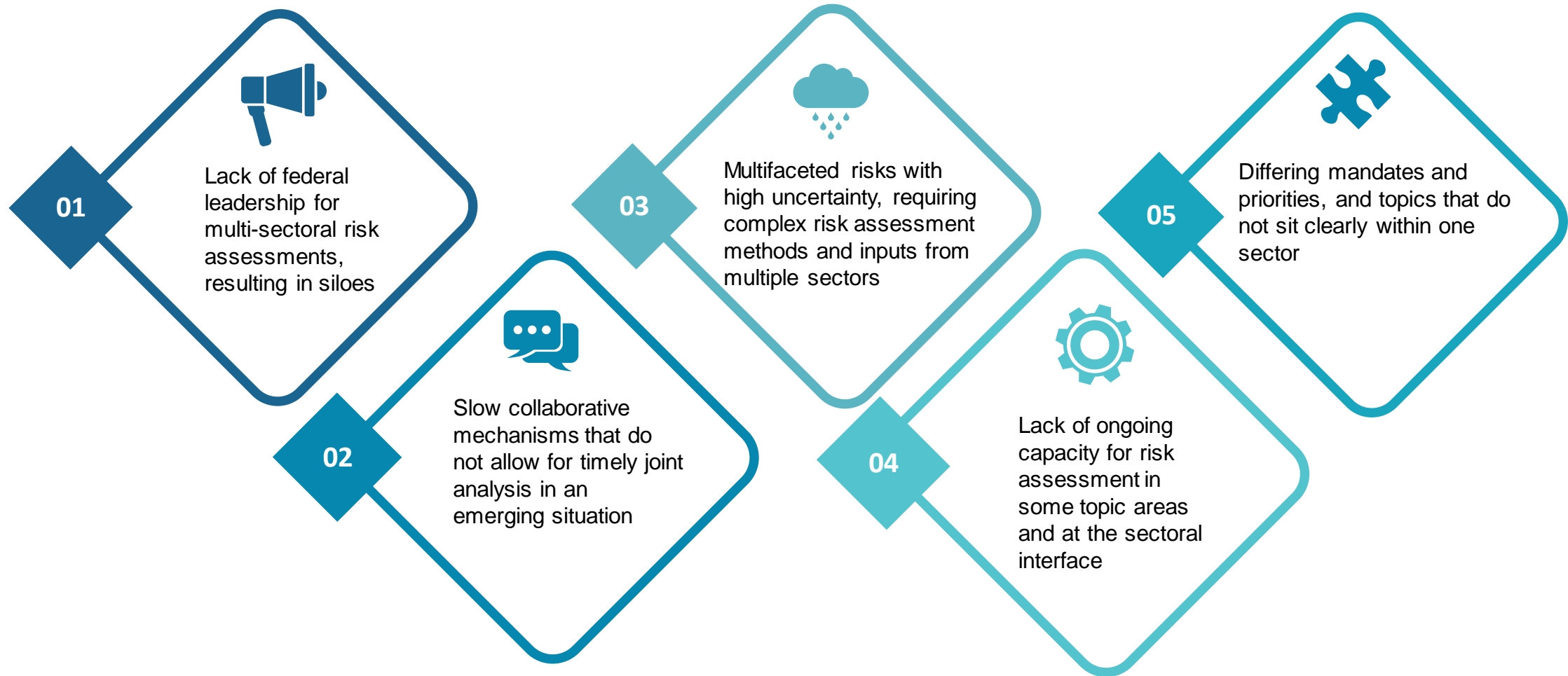


<https://www.who.int/publications/i/item/9789240059139>

Highlights the need for:

“Harmonized protocols and normative standards for One Health risk assessment”

Challenges related to Multi-sectoral Risk Assessment

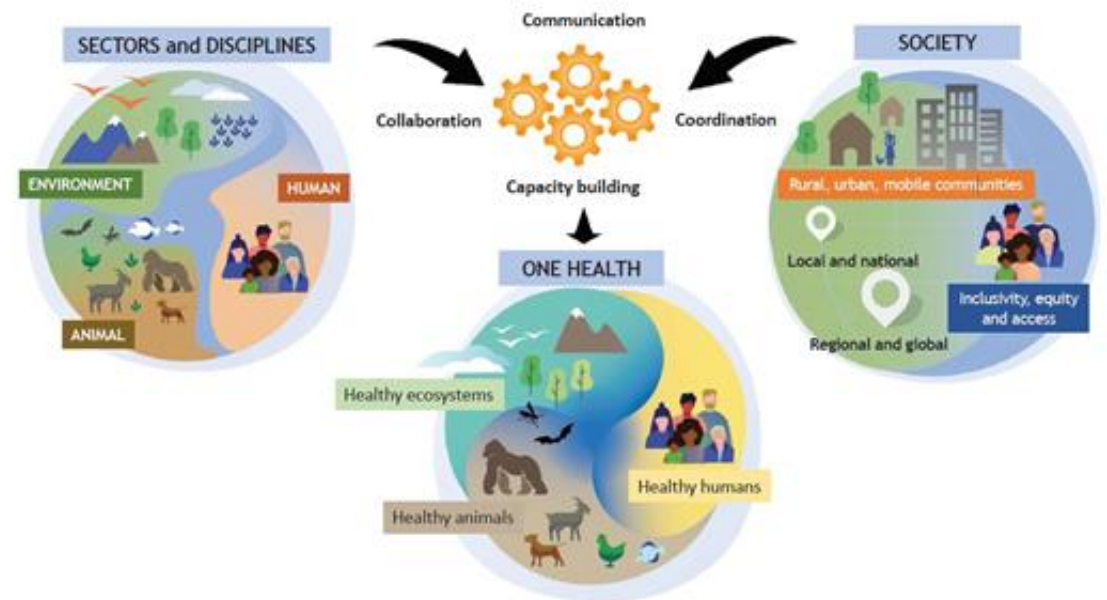


One Health and Risk Assessment Scope

What is One Health?

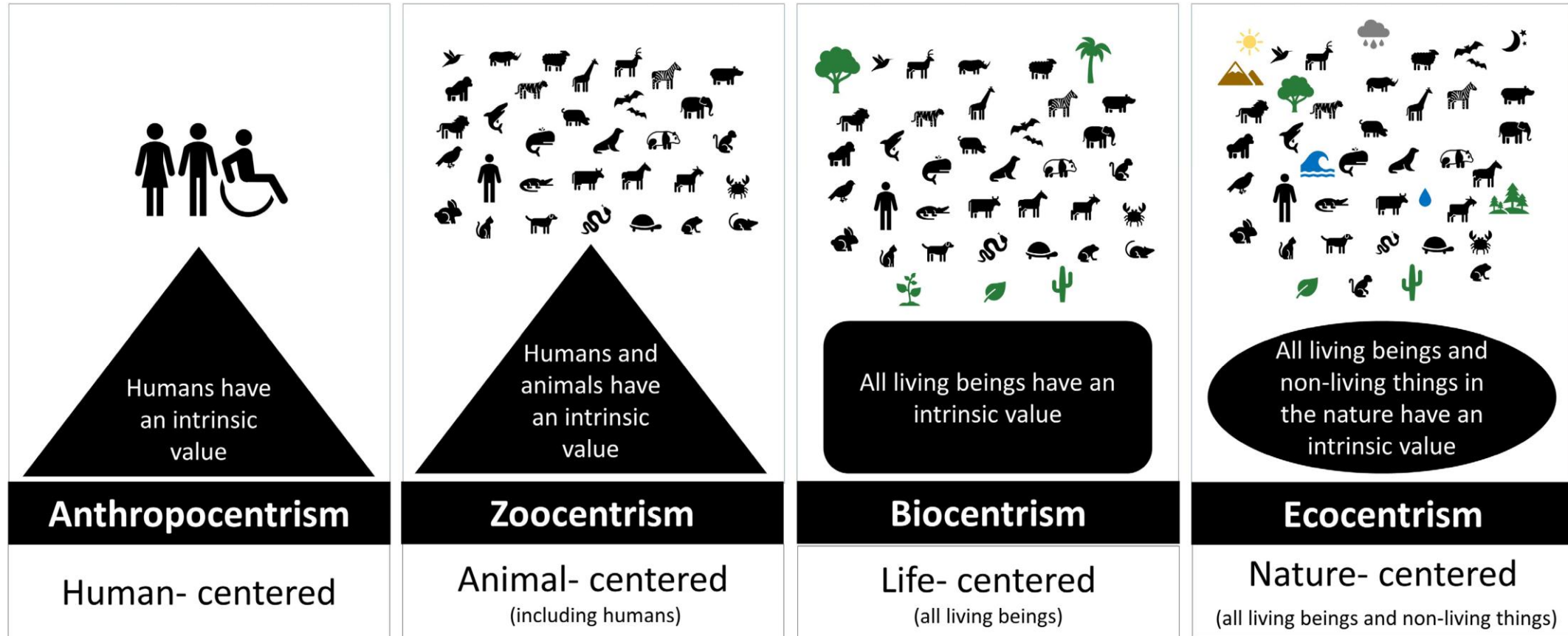
One Health High-Level Expert Panel Definition

- One Health is an integrated, unifying approach that aims to sustainably balance and optimize the **health of people, animals and ecosystems**.
- It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent.
- The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and **tackle threats to health and ecosystems**, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.



<https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohlep-s-definition-of-one-health>

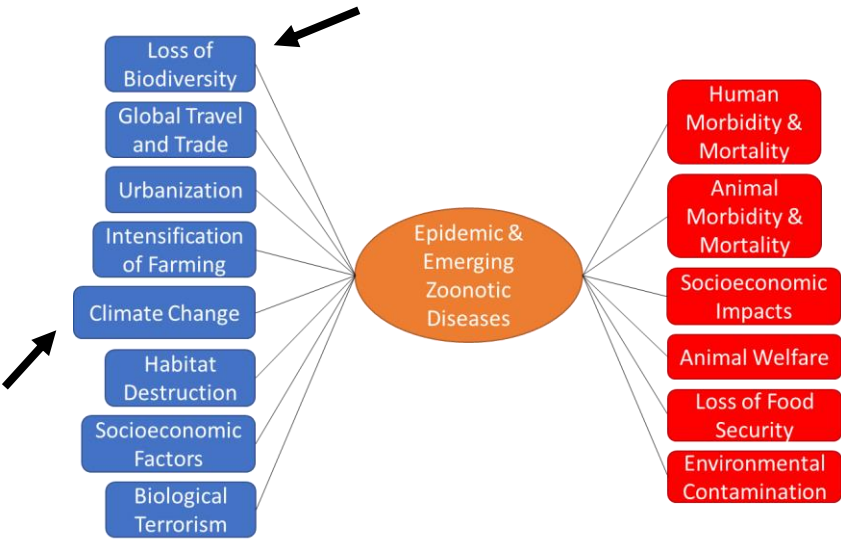
A definition with an Ecocentric perspective



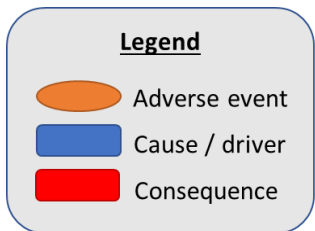
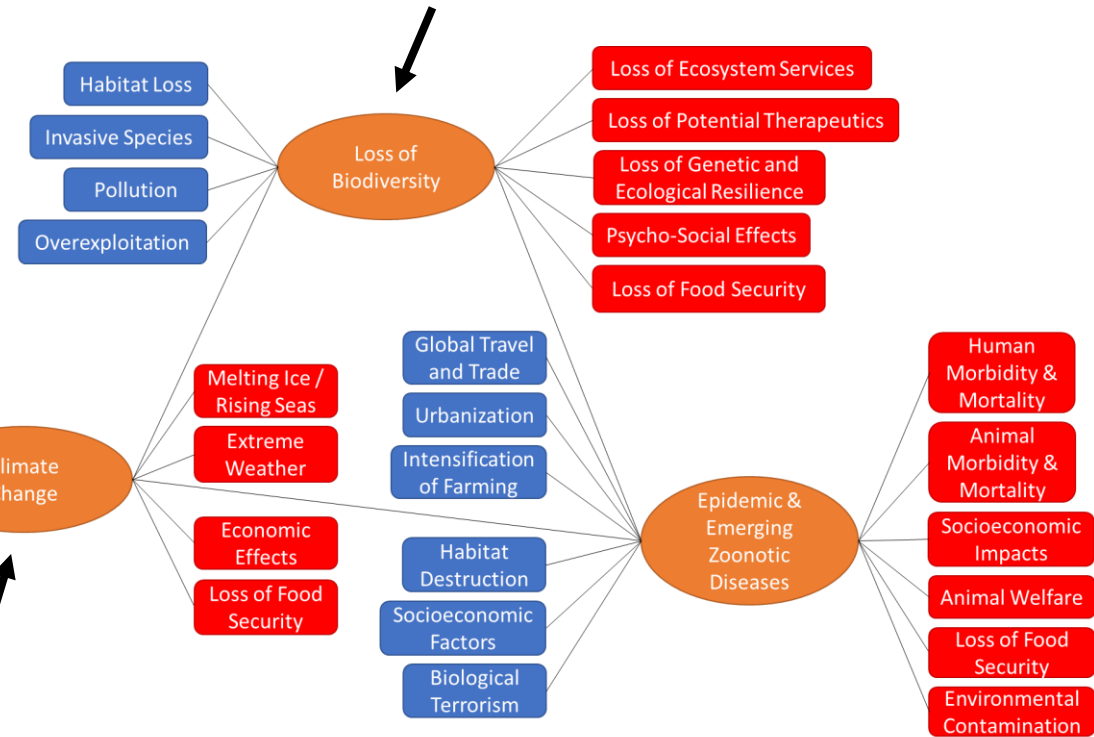
<https://www.mdpi.com/2076-2615/12/14/1845#>

Different Perspectives, continued

- Something can be seen as the central unwanted event from one perspective, but instead be seen as a driver or impact from another perspective

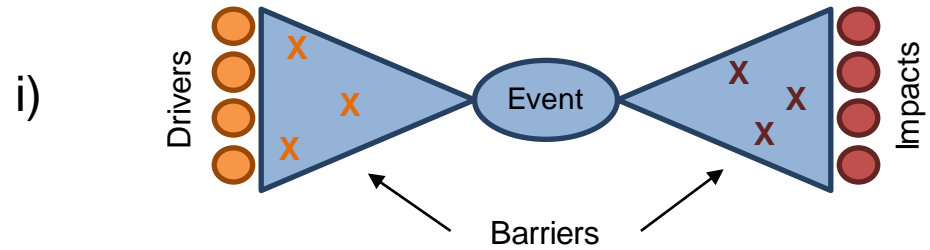


VS

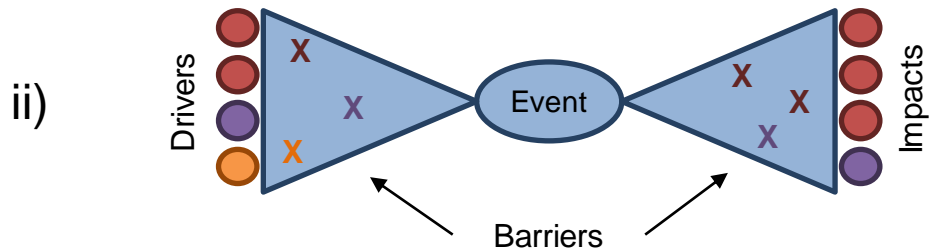
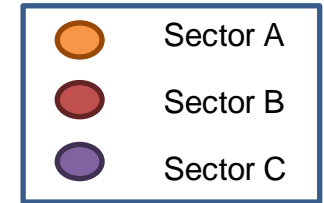


Scoping the “Intersection of Human-Animal-Ecosystems Health”

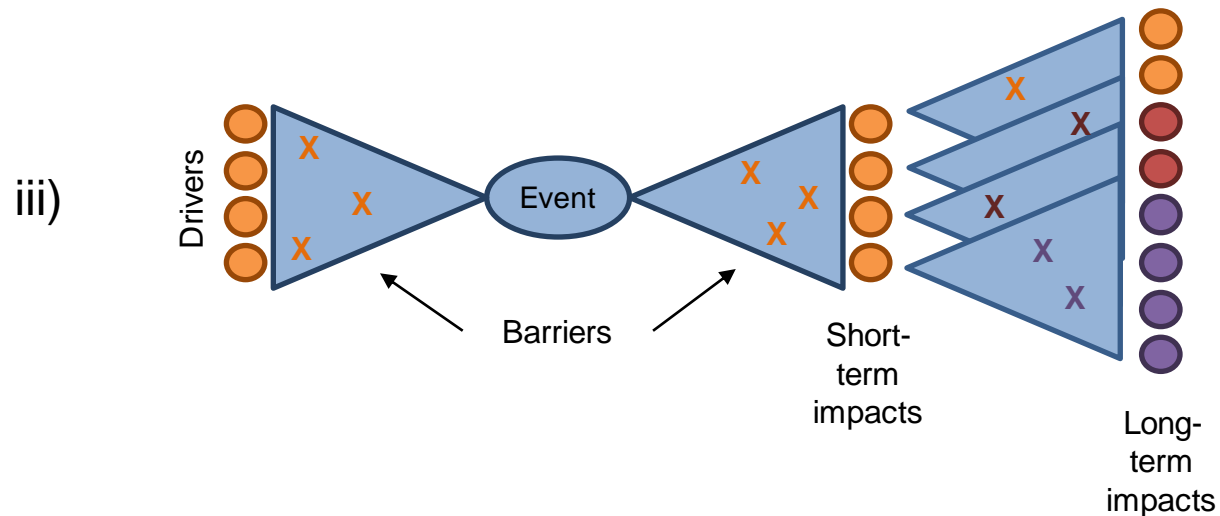
There are different ways that risks may be at the intersection between sectors:



Drivers may fall within one sector's mandate, impacts another



Both drivers and impacts may involve multiple sectors

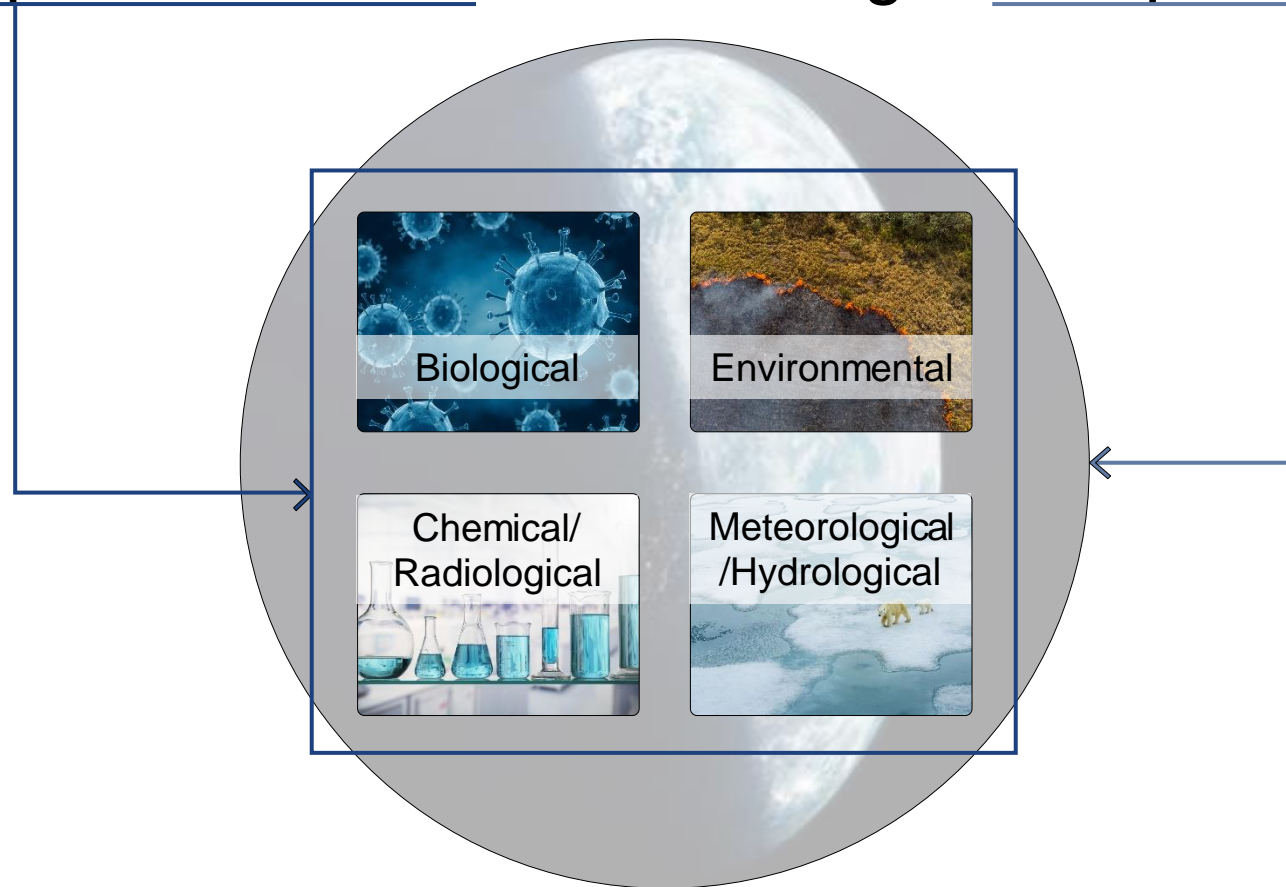


Drivers and short-term impacts may focus on one sector, while long-term impacts affect multiple sectors

Broad Scope of Hazards

One Health

= Multiple types of hazards + Occurring in complex systems



The Environment and One Health

One Health

🏠 Overview ▾ Coordination ▾ **Resources** ▾ Highlights Partners Get involved ▾

Breaking Barriers: Advancing the One Health agenda with a focus on environment

📍 Berlin (Germany), 12/10/2023 - 13/10/2023



“...with issues of **pollution, soil health, forest health, management of invasive alien species** impacting food security and global biodiversity, all given particular attention. One Health is so much more than zoonoses and AMR, with plant and ecosystem health and biodiversity at high risk and where multisectoral action is essential.” CVO, FAO (LinkedIn)

<https://www.fao.org/one-health/resources/events/events-detail/breaking-barriers/en>

Types of Scientific Assessment applicable to One Health

- The line between risk assessment and other types of scientific assessment can be blurry, especially when discussing different methods used in different sectors
- Many have a risk component, even if not fitting a formal definition of risk assessment
- Different issues might require very different types of assessment

	Strategic	Acute
Multi-hazard	Foresight risk analysis; Risk prioritization; Risk register; Risk-cost-benefit analysis	Threat triage / Threat assessment
Hazard/Product-specific	Import RA; Pre-market RA; Disease spread models; Integrated assessment models; Quantitative risk models; Habitat suitability models; Source attribution models; Foresight risk analysis and impact assessments	Risk profile; Rapid RA; Predictive modelling / forecasting; Risk sub-questions (e.g., routes of entry, risk factors, vulnerable populations)

Defining Risk Assessment

Risk analysis triad:



Risk assessment:

The formal process of measuring the likelihood and impact of an event

Other risk science products:

E.g. Bespoke models, impact assessments, foresight

Multi-Sectoral versus One Health Risk Assessments

Impacts primarily to one sector, but input/action needed from multiple

Balanced assessment of impacts across sectors

OHARA Initiative

OHARA (One Health Approach to Risk Assessment) Initiative

Vision: A better understanding of health risks to enable more prompt and effective action across sectors.

Goal: Unify efforts for multi-sector risk assessments on One Health hazards.

Objectives

Develop a protocol to operationalize a One Health approach to risk assessment in Canada

Build capacity through training

Develop / adapt various risk assessment methods and tools for a One Health context

Deliverables

OHARA Protocol

Training materials

Suite of RA methods and tools

(Focusing on identified gaps and priority areas)



Initiative Scope



LINK EXISTING

risk assessment activities using a federated approach to improve communication, collaboration, coordination, and capacity building

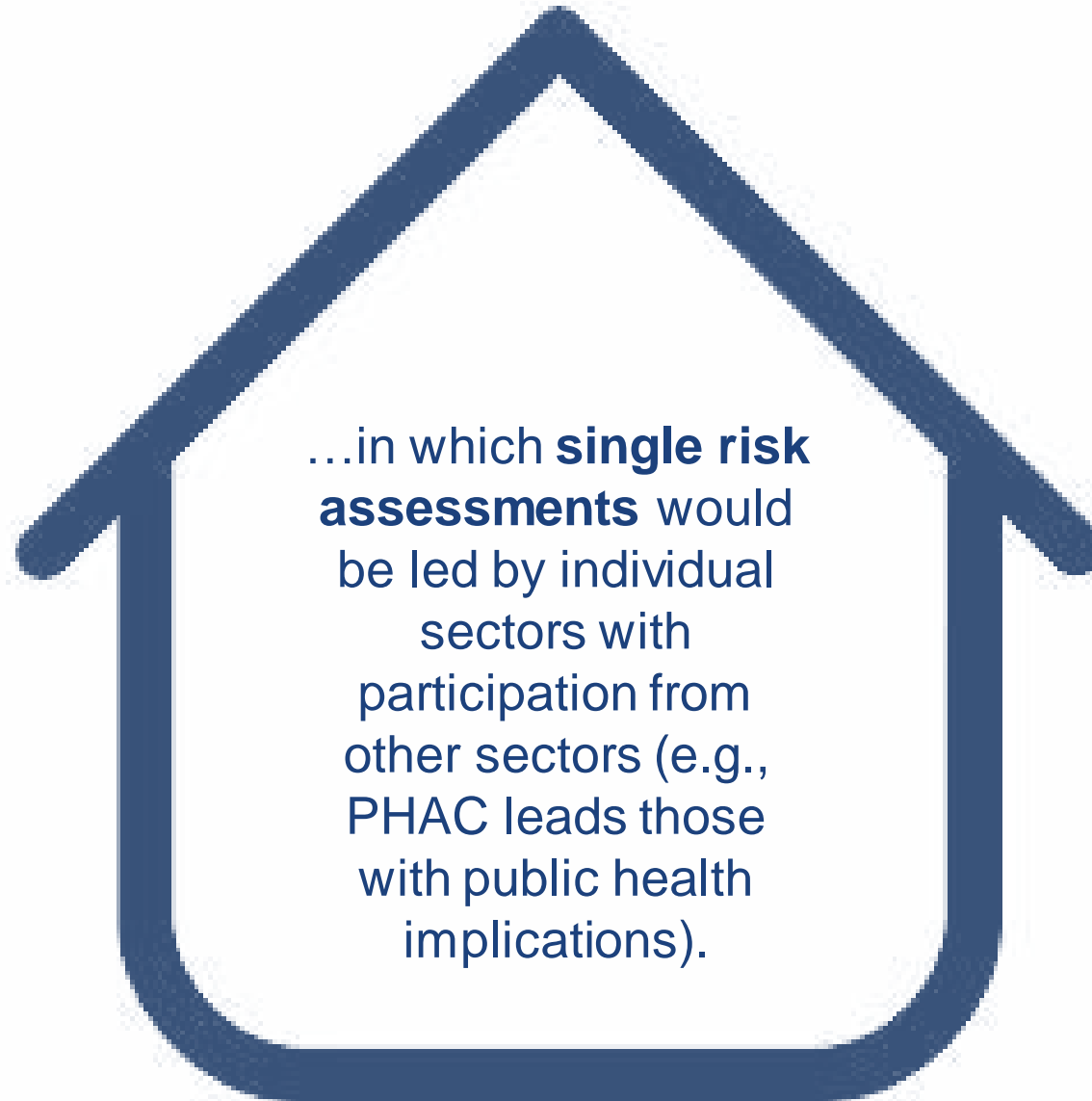


DEVELOP NEW

multi-sectoral risk assessment activities where gaps exist, such as for emerging issues

The Framework

PHAC is leading the development of an overall **framework** for a One Health approach to risk assessment for Canada...



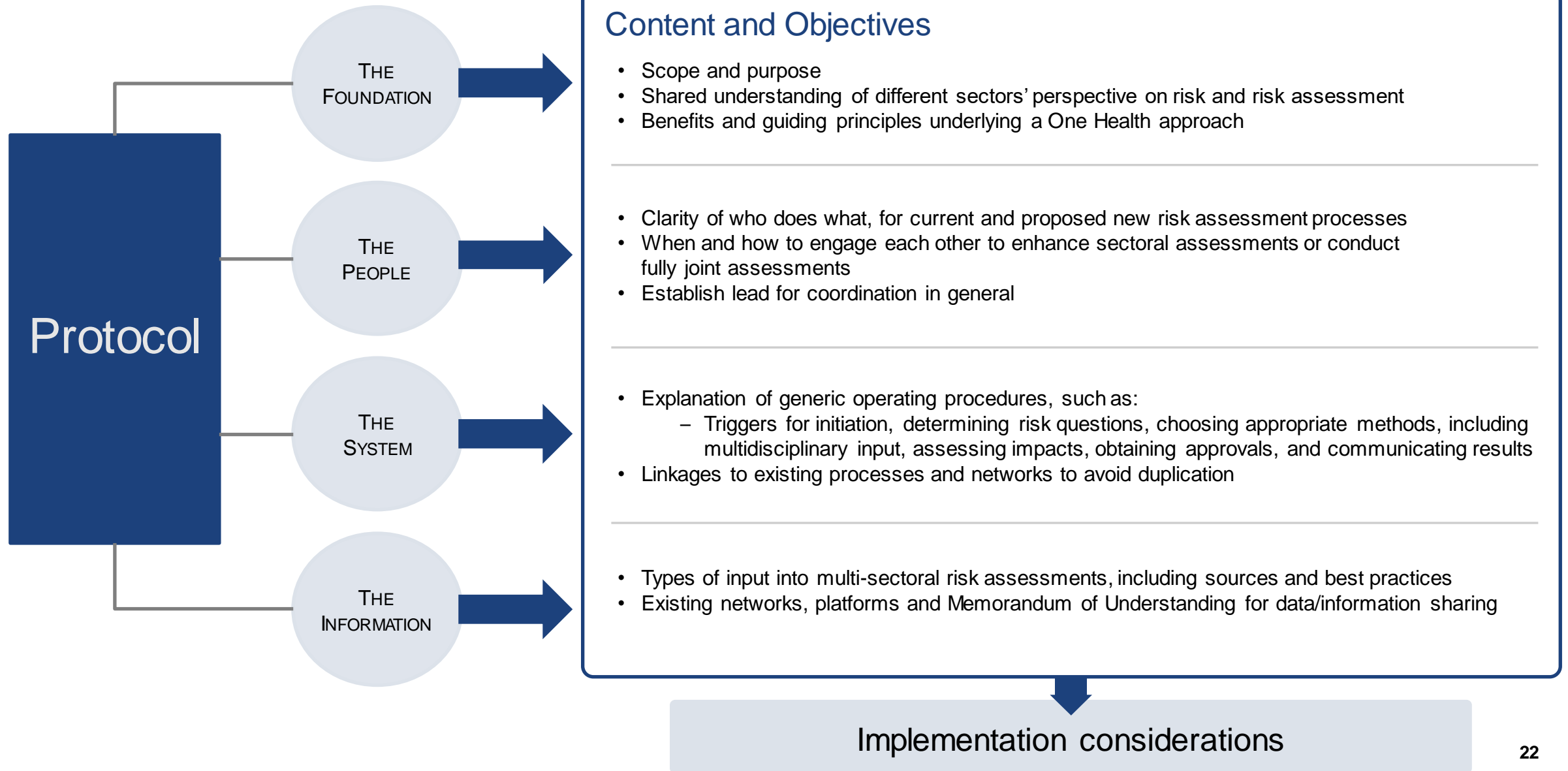
Expected Impact and Outcomes

Outcomes

- Leadership and other roles and responsibilities clearly defined
- Sustainable mechanism for multisectoral risk assessment
- Knowledge of cross-cutting risk assessment principles
- Appropriate methods/tools available when needed
- Environmental perspective incorporated
- Networks and process for engaging experts strengthened
- Intelligence quickly and efficient gathered, used to assess risk
- Engagement of multiple sectors in risk management measures

Impact: A better understanding of risks to enable more prompt and effective action for health security.

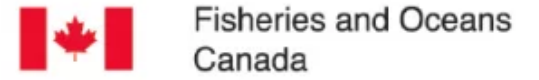
What goes into a protocol?



Implementation Considerations

- Scientific Secretariat will lead strategic activities
 - E.g., maintenance of network, methods development, training, evaluation
- Short-medium term
 - The protocol uses existing governance mechanisms where available
- Longer term
 - We know that One Health coordination mechanisms are being formed in Canada, and we expect the OHARA protocol will link well with these mechanisms

Consultation



World Health Organization



Food and Agriculture Organization of the United Nations

Multi-agency Technical Advisory Committee
(Oct 2022 – Present)



Technical Session on Methods and Tools
(Nov 2022)



World Organisation for Animal Health
Founded as OIE



International Workshop - virtual
(Feb 2023)



Pan American Health Organization



Environmental Focus Session
(Oct 2023)



National Collaborating Centre for Environmental Health
Centre de collaboration nationale en santé environnementale



Technical Activities

Literature Scan

- Q1: Methods and tools used in different sectors
- Q2: Best practices for multi-sectoral risk assessment

Lexicon

- Part 1: Identify key terms
- Part 2: Gather definitions from the standards used by different sectors
- Part 3: Determine cross-cutting principles

Survey on RA Activities, Roles and Responsibilities

- Started for Technical Session in Nov 2023
- Sent to remaining groups in June 2023

Environmental Focus Session



Session Purpose and Details

Session Purpose

To engage environmental experts to develop a shared understanding of the environmental landscape of risk assessments.



- 1-hour interactive session
- 24 attendees (planning cmte and participants)
- Weighted towards wildlife health
- **Breakout session discussions:**
 - What environment-specific considerations should inform a One Health approach to risk assessment?
 - What already exists in environmental risk assessment that we need to be aware of (when building a One Health approach)? What are the gaps?
 - What is your further advice as we go forward with OHARA?

1. What environment-specific considerations should inform a One Health approach to risk assessment?



- Broad definition of the environment is required



- Many ways the environment is incorporated into RA
 - Hazards, drivers of risk, risk and contextual factors, consequences, consequences of risk management, monitoring points



- High rate of environmental change



- Priorities focused on shorter-term impacts and siloed mandates pose challenges



- Socio-cultural and risk communication considerations are important

2. What already exists in environmental risk assessment that we need to be aware of (when building a One Health approach)? What are the gaps?

- Many structured formal environmental risk assessments with advanced methods
- Only a selection represented at this meeting, including:

Existing risk assessment activities

Plant protection risk assessments

Biotechnology safety assessments

Aquatic assessments

Infectious disease risk assessments

Invasive species assessments

Gaps / Challenges

Evidence gaps

Lack of data, and tools to collect data

Lack of rigour in evidence

Research on link between environment and diseases

Need to know what data is necessary to affect change (focused data collection)

Methodological gaps

Blind spots due to siloed working

Public health risks associated with handling wildlife

Connection between risk assessment and risk management

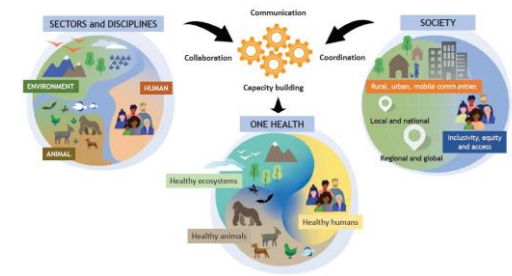
Incorporating Indigenous Knowledge (example methods provided)

Training gaps

Trans-disciplinary training

3. What is your further advice as we go forward with OHARA?

- Clearly define One Health (scenarios / examples would help)
- Networks
 - Know who the specialists are, prior to needing them
 - Leverage existing networks
 - Consult more broadly in environmental health
- Methods
 - Accessible tools, templates, guidance would be helpful
 - Balance group size with the need for expertise / perspectives
- Training
 - Training in a One Health approach to risk assessment
 - Training in methods used by formal environmental RAs



<https://www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohhlep-s-definition-of-one-health>



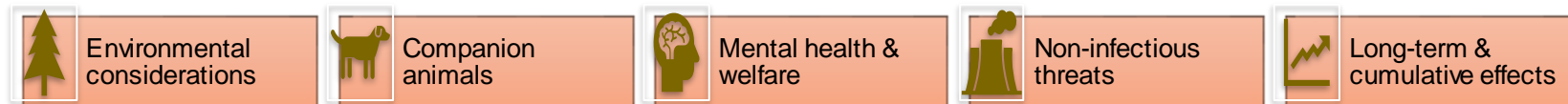
Session Conclusions

- We need:
 - To expand the scope of risk assessments, create connections, and share knowledge across different sectors and disciplines to:
 - Address a wide range of environmental hazards comprehensively and tackle risks holistically
 - Break down silos and create connections to avoid duplicating efforts
 - Learn from each other
 - Methods that consider indirect and longer-term impacts
 - Ecological, economic, and cultural aspects
 - To integrate diverse knowledge systems (e.g., Indigenous Knowledge)
 - Broader participation from different areas of the environment sector

Lessons Learned

Lessons Learned from OHARA To Date

- Canadian & international partners have shown enthusiasm and support
- Many groups in each sector conduct different types of risk assessment
 - A large variety of methods and tools are used, depending on the risk question
- A One Health approach to risk assessment requires flexibility in roles and responsibilities to handle hazards with fuzzy alignment to departmental mandates
- When an issue arises, a multi-sector Steering Committee can scope/frame the risk and determine needs for analysis
- A One Health approach may be used to:
 - Provide a ‘One Health lens’ to sector-specific assessments; or,
 - Conduct a full ‘One Health risk assessment’ with impacts on all sectors fully considered
- Methodological gaps identified through consultation:



Next Steps

Next Steps

- Draft protocol – review by advisory committee Oct-Nov 2023
- Present to Deputy Ministers Committee on One Health (federal, multi-agency) – early 2024
- Activities moving forward:
 - Endorsement of / engagement on protocol
 - Strengthening link to certain sectors
 - Advancement of methods
 - Development of ongoing network
 - Training
 - Potential future activities:
 - Methods inventory, mapping of functional areas, MOUs/Agreements

Thank You!

Appendix

Multi-agency Technical Advisory Committee Membership

Agency	Centre/ Directorate
Public Health Agency of Canada	Centre for Integrated Risk Assessment
	National Microbiology Laboratory / Public Health Risk Sciences
	Centre for Food-borne, Environmental and Zoonotic Infectious Diseases
	Centre for Immunization and Respiratory Infectious Diseases
	Antimicrobial Resistance Task Force
Canadian Food Inspection Agency	Animal Health Science Directorate
	Animal Health Risk Assessment and Intelligence Unit
	Office of the CVO/OIE Delegate
	Office of the Chief Food Safety Officer
Environment and Climate Change Canada	Canadian Wildlife Service
	Ecotoxicology and Wildlife Health Division
Health Canada	Bureau of Microbial Hazards
Fisheries and Oceans Canada	Aquaculture, Biotechnology and Aquatic Animal Health Branch

Provincial Risk Assessment Experts

British Columbia Centre for Disease Control	Public Health Response Service
Ontario Ministry of Agriculture, Food and Rural Affairs	Veterinary Science Unit
Saskatchewan Ministry of Environment	Fish and Wildlife Branch

Technical Session Participants

Federal	Centre / Directorate
Public Health Agency of Canada	Centre for Integrated Risk Assessment
	National Microbiology Laboratory / Public Health Risk Sciences
	Centre for Food-borne, Environmental and Zoonotic Infectious Diseases
	Centre for Immunization and Respiratory Infectious Diseases
	Centre for Biosecurity / Biosafety Risk Assessment
Canadian Food Inspection Agency	Animal Health Science Directorate
	Animal Health Risk Assessment and Intelligence Unit
	Animal Feed and Veterinary Biologics Division
	Office of the Chief Food Safety Officer
Environment and Climate Change Canada	Canadian Wildlife Service
	Ecotoxicology and Wildlife Health Division
Health Canada	Bureau of Microbial Hazards
	Bureau of Chemical Safety
	Veterinary Drugs Directorate
Fisheries and Oceans Canada	Aquaculture, Biotechnology and Aquatic Animal Health Branch
Indigenous Services Canada	First Nations and Inuit Health Branch

Provincial	Branch / Unit
British Columbia Centre for Disease Control	Public Health Response Service
Saskatchewan Ministry of Environment	Fish and Wildlife Branch
Manitoba Agriculture	Animal Health and Welfare Team
Ontario Ministry of Agriculture, Food and Rural Affairs	Veterinary Science Unit
Public Health Ontario	Emergency Planning, Response and Recovery
New Brunswick Department of Health	Well-being, Legislation and Standards Unit

International Workshop Participants

International Participants

World Health Organization (WHO)
World Organisation for Animal Health (WOAH)
Food and Agriculture Organization of the United Nations (FAO)
Pan American Health Organization (PAHO)
European Centre for Disease Prevention and Control (ECDC)
United Kingdom, Health Security Agency (UKHSA)
United Kingdom, Department for Environment, Food and Rural Affairs (DEFRA)
Netherlands, National Institute for Public Health and the Environment (RIVM)
United States, Centers for Disease Control and Prevention (CDC)
United States, Department of Agriculture (USDA)
Australia, Department of Agriculture, Fisheries and Forestry (DAFF)

Canadian Participants

Public Health Agency of Canada
Health Canada
Canadian Food Inspection Agency
Environment and Climate Change Canada
Fisheries and Oceans Canada
Indigenous Services Canada
British Columbia Centre for Disease Control
Saskatchewan Ministry of Environment
Manitoba Agriculture
Public Health Ontario
Ontario Ministry of Agriculture, Food, and Rural Affairs
New Brunswick Department of Health
Canadian Wildlife Health Cooperative
National Collaborating Centre for Environmental Health

Environmental Focus Session Participants

Planning committee

Facilitator (contracted)

Canadian Wildlife Health Cooperative (CWHC)

Environment and Climate Change Canada

Public Health Agency of Canada

Saskatchewan Ministry of Environment

Other organizations represented

Canadian Food Inspection Agency (Plant Health Risk Assessment)

Environment and Climate Change Canada

Fisheries and Oceans Canada

Indigenous Services Canada

Canadian Wildlife Health Cooperative (CWHC) / British Columbia Ministry of Agriculture

Alberta Ministry of Environment and Parks

Saskatchewan Ministry of Environment (Climate Extremes and Adaptation Specialist)

Manitoba Agriculture and Resource Development

Quebec Ministère des Forêts, de la Faune et des Parcs

Nova Scotia Department of Lands and Forestry

Yukon Department of the Environment

University of Toronto

University of Saskatchewan