

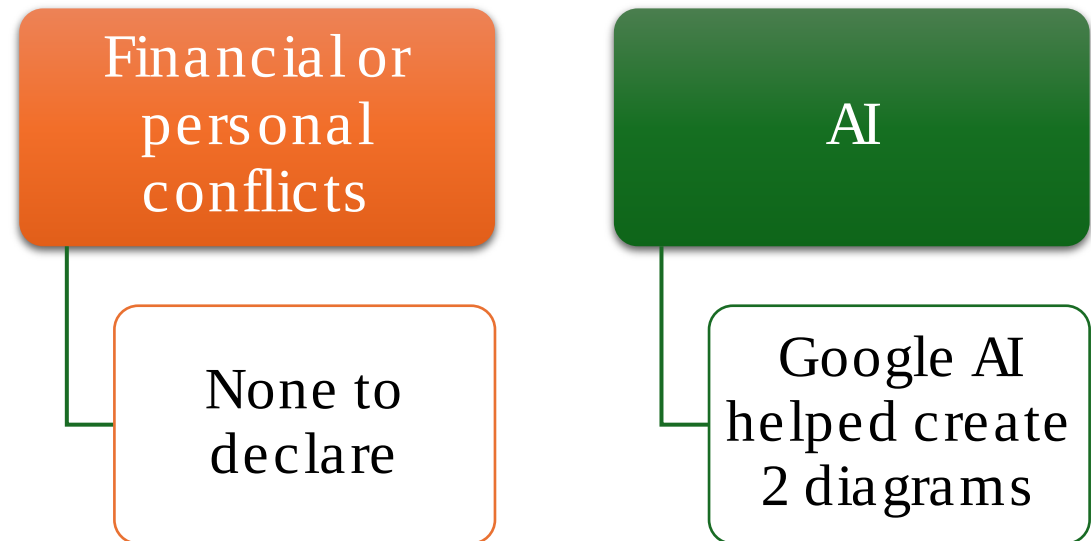
If One Health is the solution, what is the problem?

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Conflict of Interest Statement and AI Declaration



UNDERSTANDING AN ECOSYSTEM

The Thing That Interests You



THE SUBJECT
(e.g., An Oak Tree, "The Thing")

AN ECOSYSTEM:

THE RELATIONSHIPS BETWEEN ALL THE THINGS AFFECTING THE THING THAT INTERESTS YOU.

LIVING THINGS (BIOTIC)

Birds
Food, Shelter, Seed Dispersal

Squirrels
Seed Hoarding, Competition

Vegetation
Competition for Light, Resources

Bacteria/Fungi
Decomposition, Nutrient Cycling

NON-LIVING FACTORS (ABIOTIC)

Sun
Light Energy, Photosynthesis



Water
Moisture, Anchorage



Soil
Nutrients, Anchorage



Air
CO₂, Oxygen

Climate Change
Temperature/Rainfall Shifts

Pollution
Chemical Runoff

HUMAN FACTORS & ACTIVITIES

Land Use
Deforestation, Agriculture

Human Use
Recreation, Construction

NATURAL EVENTS & PROCESSES

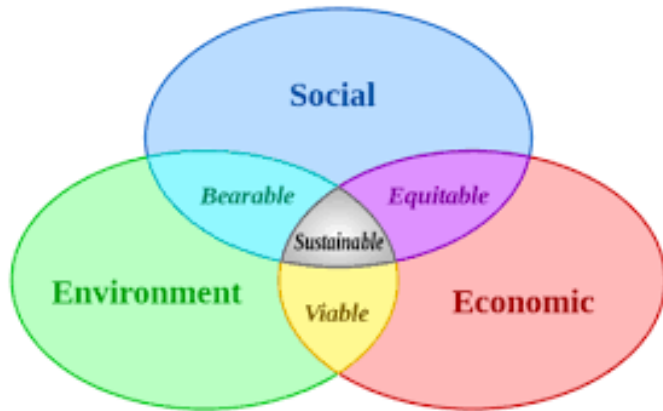
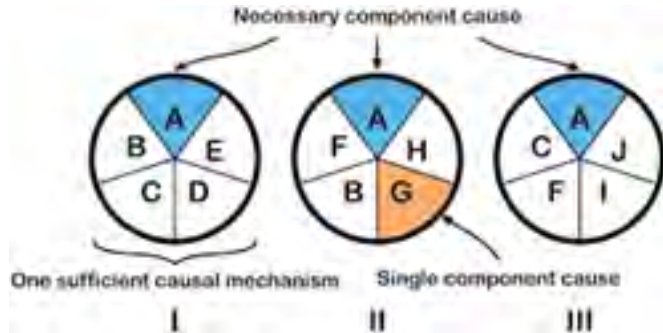
Weather
Wind, Rain

Natural Disturbances
Storms, Floods, Fire

Seasons
Growth cycles

CAHS mandate is to provide
independent, evidence-based, and
timely assessments of urgent health
challenges affecting Canadians

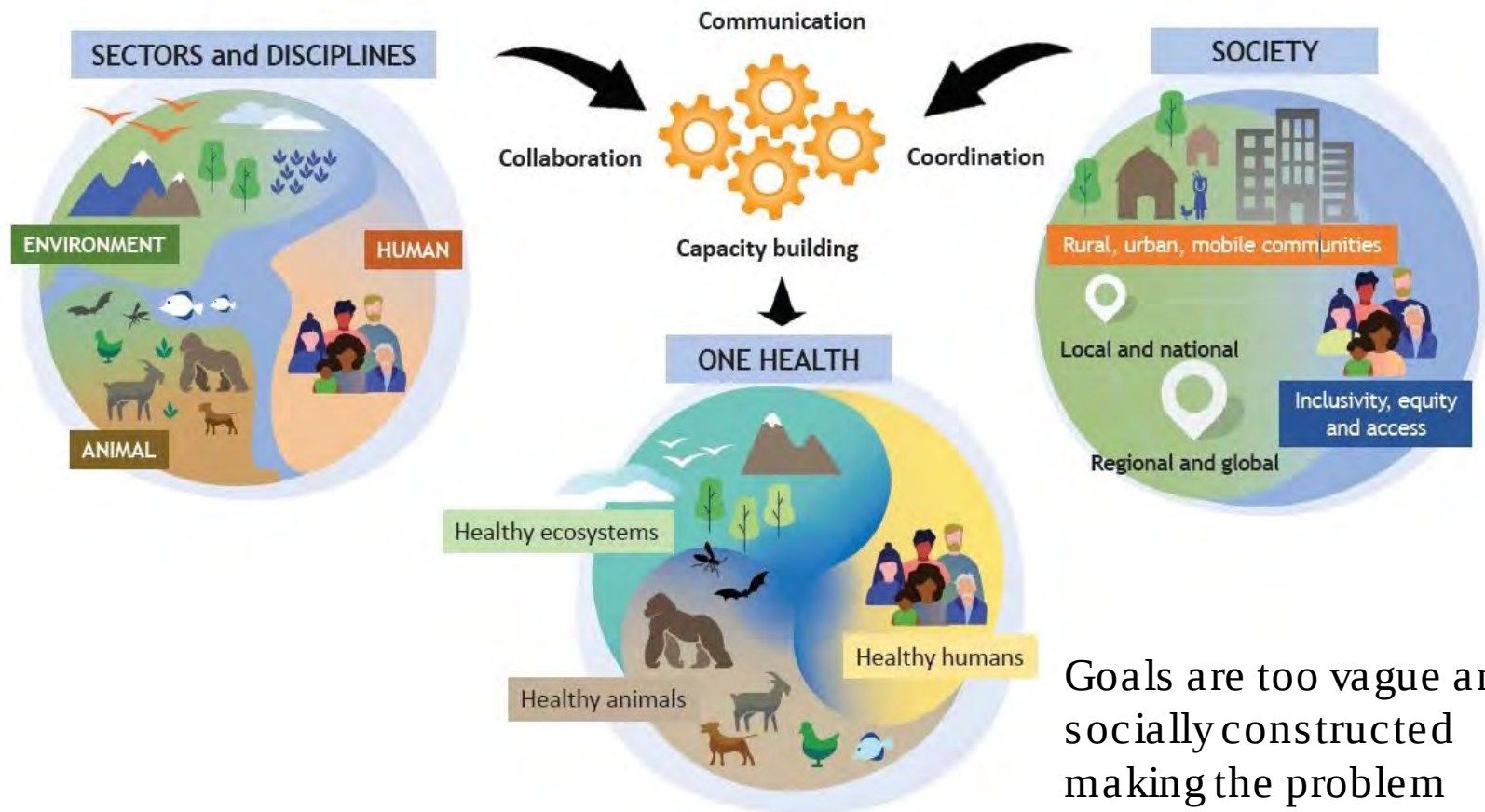
We are interested in
health



Everything is One Health upstream

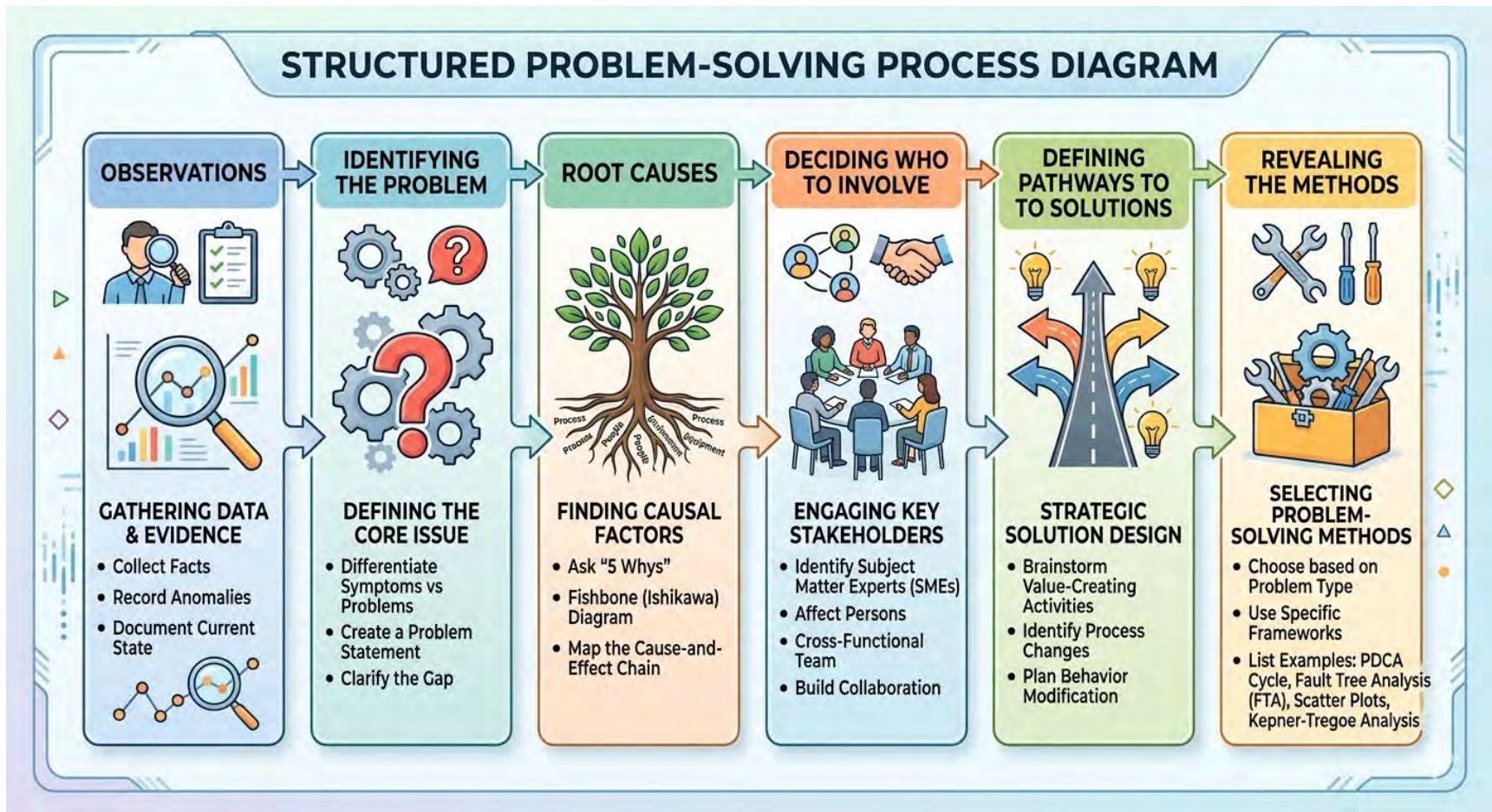
- Every living thing's life course is affected by human, animal and environmental processes
 - *But such a massive scope is a problem...*
 - *complicates coordination and leadership*
 - *increases competition and conflict*
 - *decreases the likelihood of being helpful*

Does this help us identify the unique problem space for One Health?



Goals are too vague and socially constructed making the problem scope endless

Problem must precede methods



**What is the
problem?**



Candidate problem 1

Human and animal health issues are interdependent in a shared environment, but our investigations and management are often not.



	One Health Taxonomy			
	Cross-species health		Socio-ecological systems	
	Lower diversity	Higher diversity	Lower diversity	Higher diversity
Why we work together				
Unable to address health challenges on their own	Managing a rabies exposure in a child	Integrated vector borne pathogen surveillance	Pandemic hotspot detection	Multi-sectoral advocacy for climate change adaptation
Coherence in addressing health challenges across sectors	Salmonella control	Antimicrobial resistance prevention and control strategies	Alternative food and income options created to reduce wildlife trade pathogen spillover	Wildlife conservation to support food security in rural communities
Increase and mobilize resources	Shared cold chains to deliver human and animal vaccines in low resource settings	Animal health resources to stabilize food security	Combining urban wildlife ecology and urban planning for rodent borne disease control	Watershed ecosystem as multi-solving health systems for people and wildlife

Duplicative problem scope



VETERINARY PUBLIC
HEALTH

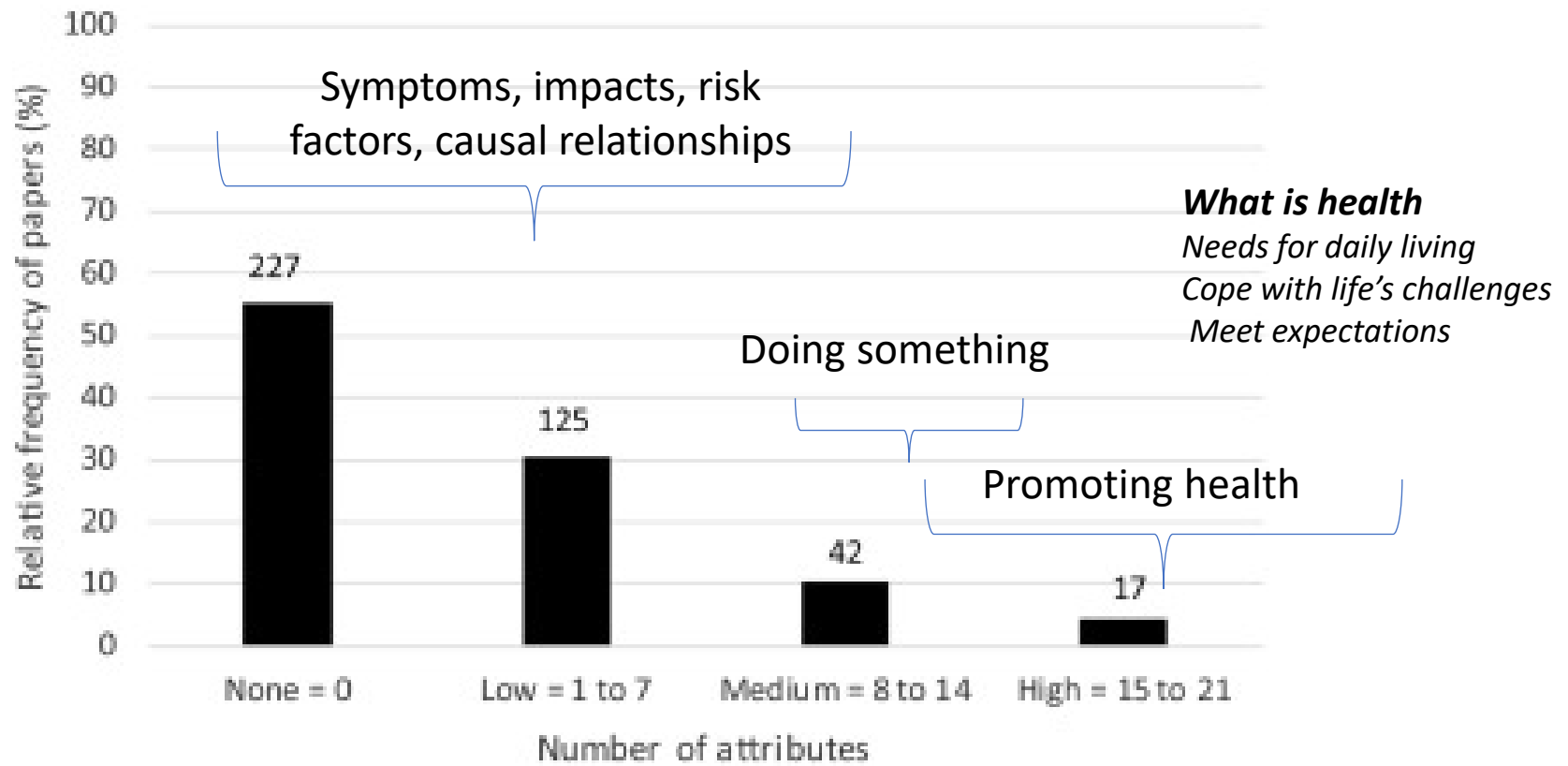


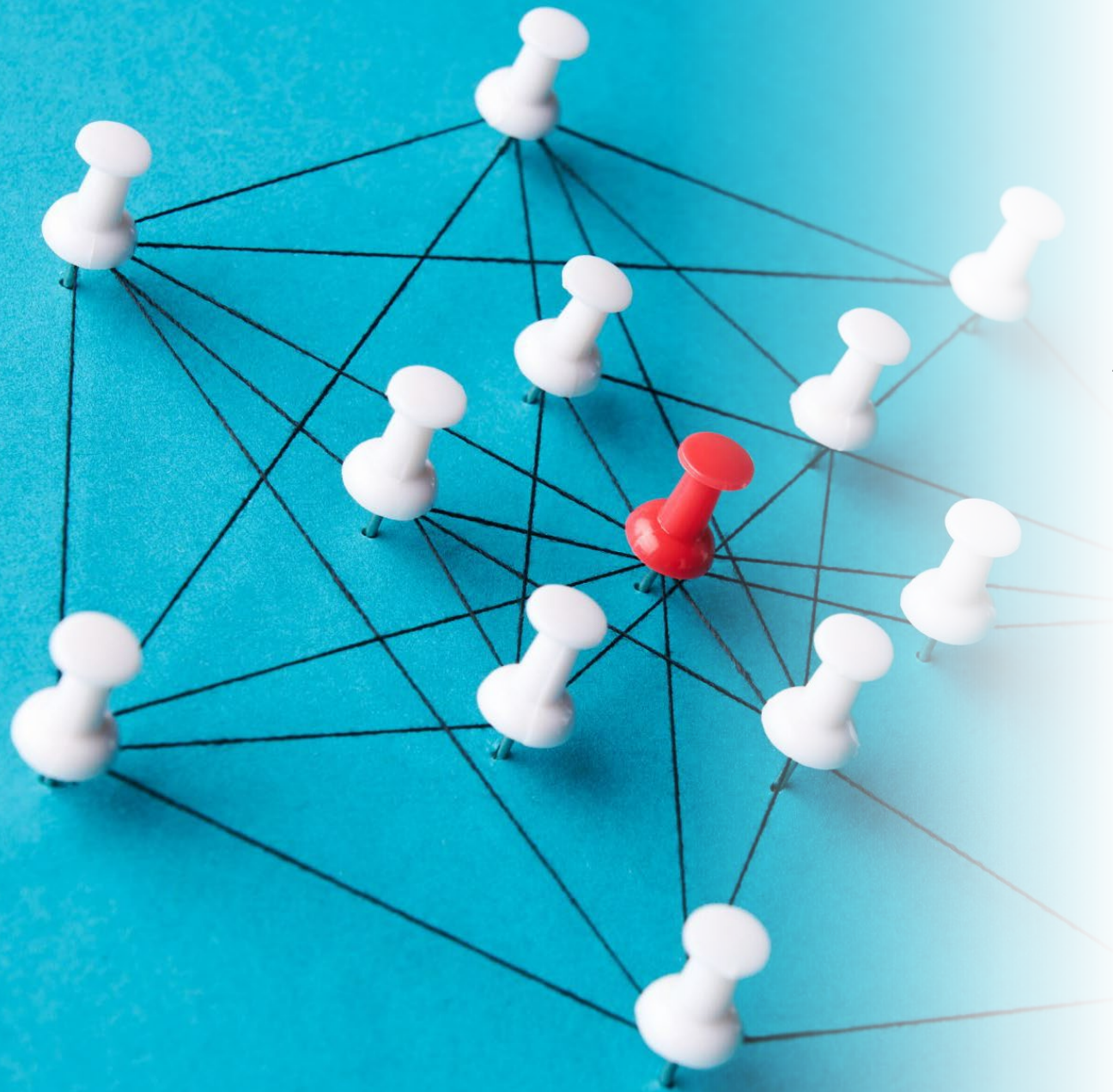
Ecotoxicology

GLOBAL
FOOD & HEALTH
SYSTEMS RESEARCH

Does One Health do health?

Mostly harms, mostly infectious



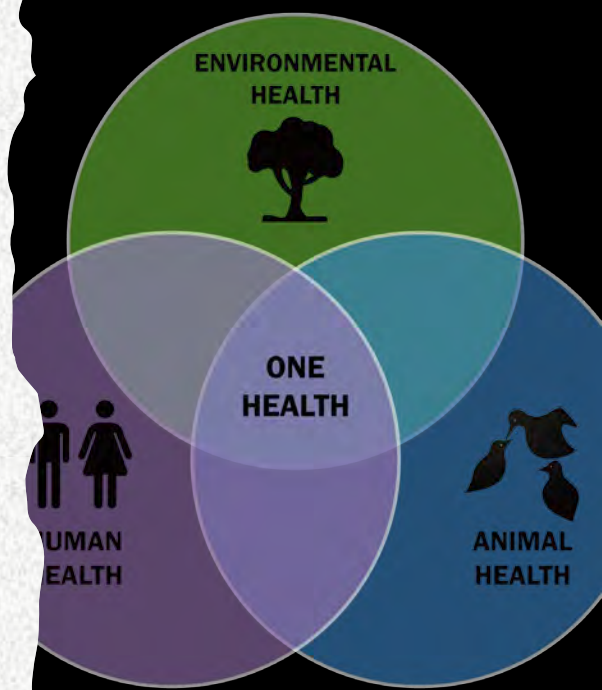


Candidate
problem 2

Holism in health
socioecological
systems
(aka oneness)



Is the One of
One Health
equitable?



MMHSRP Permit.N



Missing a One Health ethic for ‘oneness’



Intergenerational and interspecies health equity

Actions to protect the health of one species today should not compromises the ability of future generations or other species to meet their own needs



Health is interproblematory

US

ALL OTHER SPECIES

THIS GENERATION

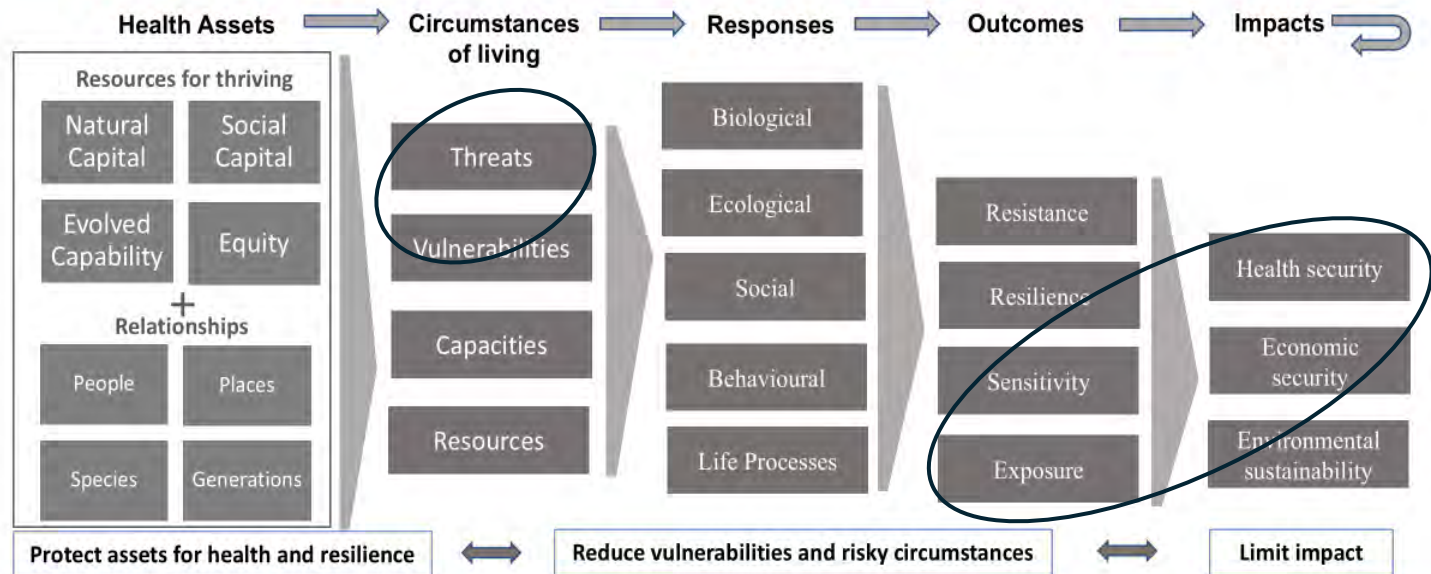
AND THE NEXT

One Health in the eco-social continuum of care.



Working upstream in the socio-ecological model of health

Environment
as asset and
not hazard



Multisolving for resilience in a share setting
happens here

Most investment is here



Environmental health

Health Promotion

EcoHealth

Ecosystem Health

One Health

Population health

Planetary Health

Global Health

Sustainable Development



‘I’ve been to
this meeting
for 30 years’



What do these have in common?

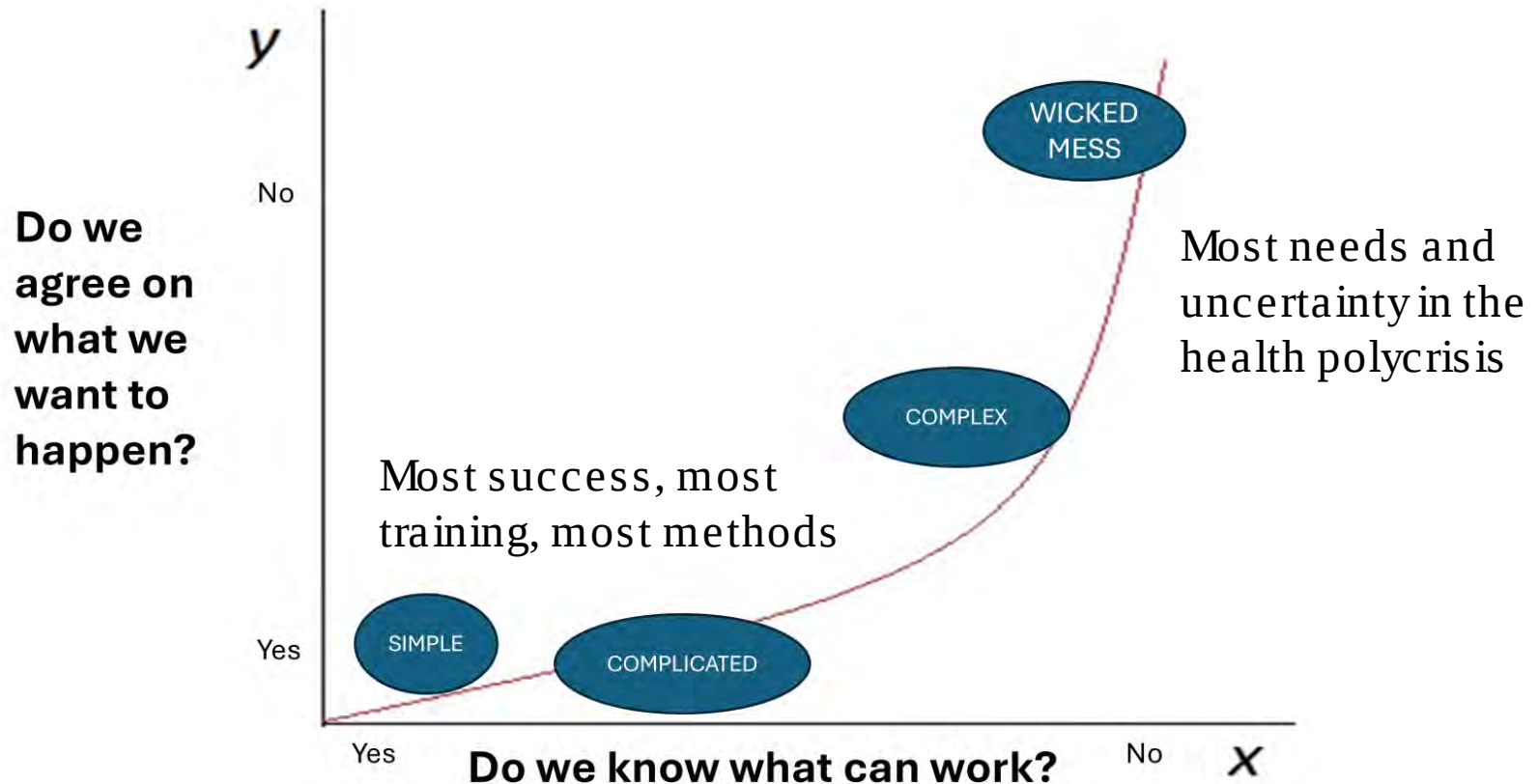
Are these the essential One Health problems?

The status quo
does not do
well with
“messy” issue

- straddle the borders of authority, knowledge, budgets and values
- causes, solutions, and even the problems are unclear, interconnected, and/or conflicting

Messy
problems are
not solved, they
are changed

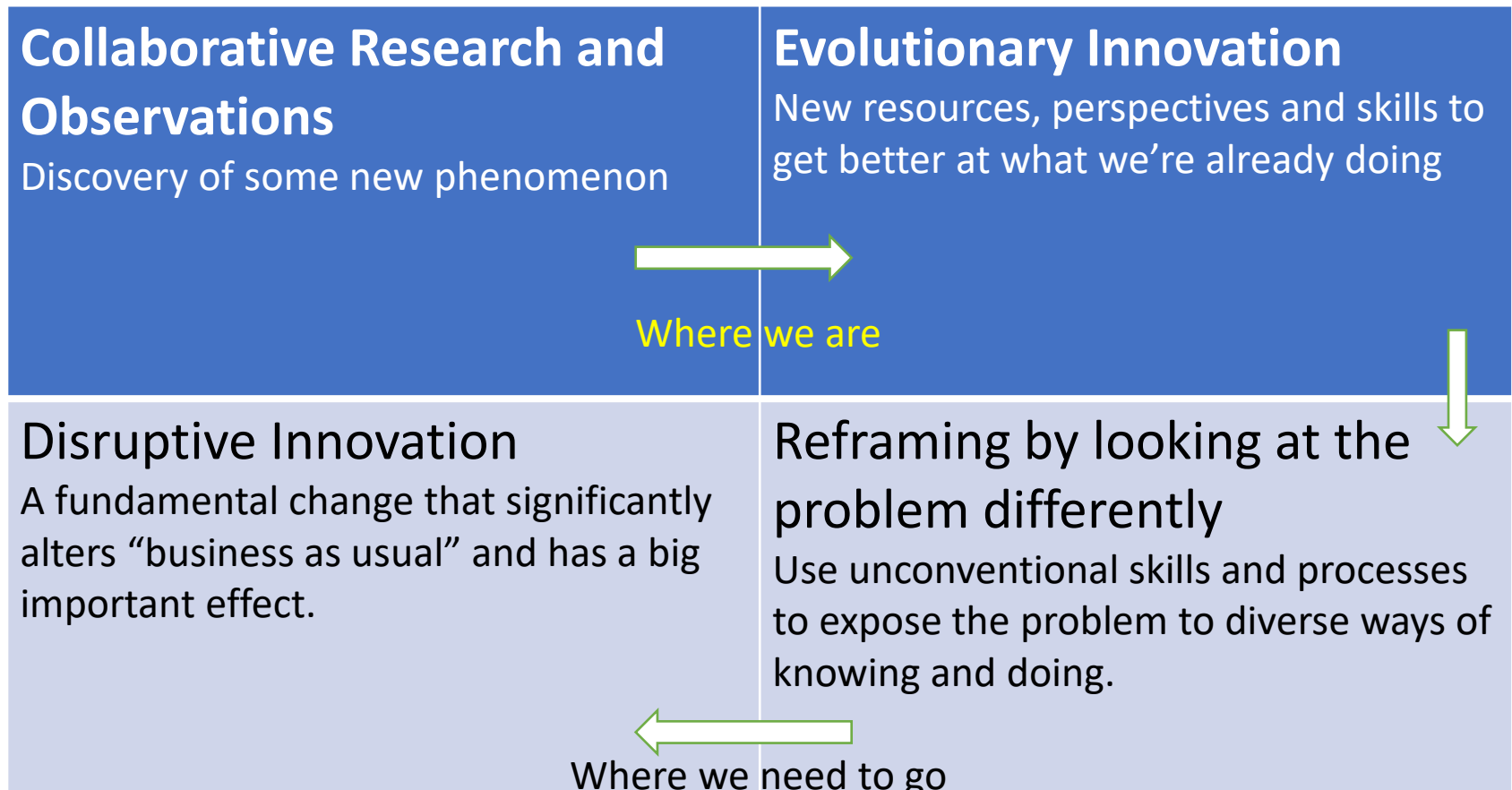
- the usual research, policy, institutions and lifestyles see a problem with identifiable solutions (even when transdisciplinary)



Root cause?

20th century thinking for 21st century issues

Pathway to future-ready innovation



Summary Problem Proposition:

Prevailing One Health problem space is not unique nor dealing with the root issues needed to confront a messy complex world

Response to threats alone
will always be a too late
strategy

*Ethical and pragmatic
need for a continuum
of care that builds
health and resilience*

Without interspecies and
intergenerational health
equity, there will always
be win-lose situations

*Today's wins lead to
tomorrow's loss*

Current way of doing will
relegate us to be
retrospective geniuses and
not agents of change

*Invest in
implementation
science and
interproblematory
leaders and scholars*



Are we preparing future-ready One Health practitioners?

Pillars to future-ready One Health

Recognize
interdependence of
human and non-human
systems

Shift from issue
specific solutions to
comprehensive or
system-level change.

Multifaceted
approaches that
address problems from
several perspectives

Cross-sectoral learning
to share ideas,
innovations,
information, resources,
and expertise.

Essential thinking skills for future-readiness

Specialized
generalists

Critical Thinking

- Looking at problems & solutions in new ways
- Link knowledge across fields

Creative thinking

- Being open to new ways of thinking
- Try, adapt and learn

Communicating thinking

- Mobilize what you know to those who need to know in ways they can know

Collaborative thinking

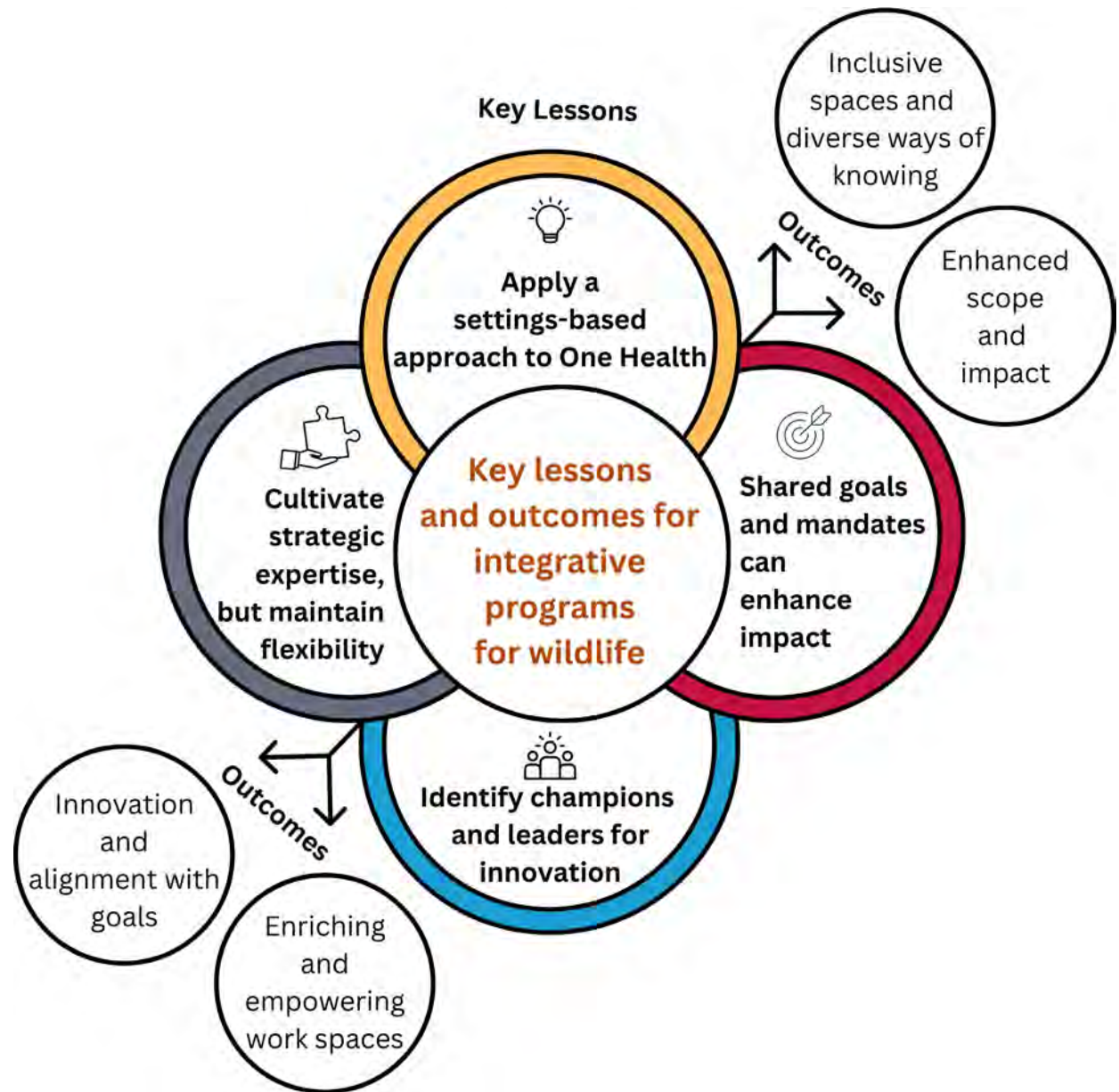
- Using what you know in new situations
- Incorporating what others know into what you do



Create
opportunities
to explore

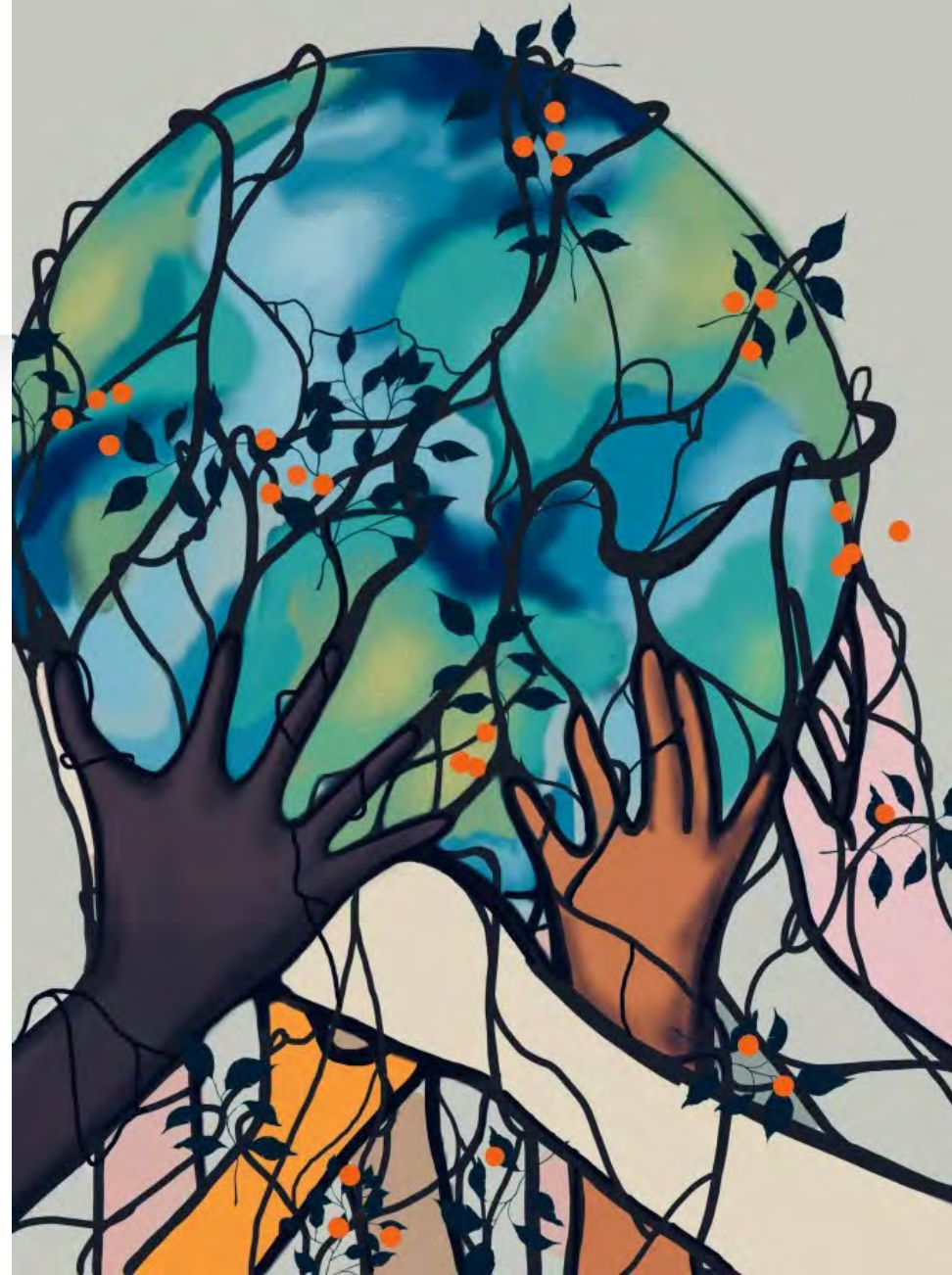
- Learners can roam across disciplines or between different professions
 - Avoid One Health becoming its own cloister
- Remove disciplinary barriers in educational experiences
 - Value breath

Create
processes and
procedures to
enable
collective
action



Create value for intellectual interconnection and interdependence

- Rewarded for considering multiple perspectives, and inquiry-based learning
 - This takes time
- Need safety to.....
 - build relationships
 - learn with others
 - be wrong and fail
 - incorporate new ideas and differences in opinions
 - reflect on what was learned



FINAL QUESTION

Can we deliver 4 pillars of truly equitable health in the face of planetary threats?

- Foster circumstances so people, animals and environments safely and sustainably **co-exist**
- Aid in prevention and recovery so all species can **exist**
- Keep shared places healthy so all can **persist**
- Know what works for whom and under what circumstances



A large colony of seals, likely elephant seals, is gathered on a rocky beach. The seals are of various shades of brown and grey, with some showing lighter patches on their heads. They are positioned on dark, jagged rocks. In the background, the ocean waves are visible, breaking against the shore under a cloudy sky. The overall scene is dimly lit, suggesting dusk or dawn.

Thank you

Normal got us here. It won't get
us out.