



Call to Action: Developing OH Food Systems Transdisciplinary Practitioners

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Today's Food Journey

- Complexity & challenges of sustainable food systems
- Growing need for OH approaches applied to food
- Why we need to develop OH transdisciplinary practitioners
- Barriers to implementing the OH approach
- Tools for academia and organizations

Emergence of Convergence

**Genetic
and
Biological
Factors**

**Physical and
Environmental
Factors**

Ecosystems

Animals

**Unsustainable
Food Systems**

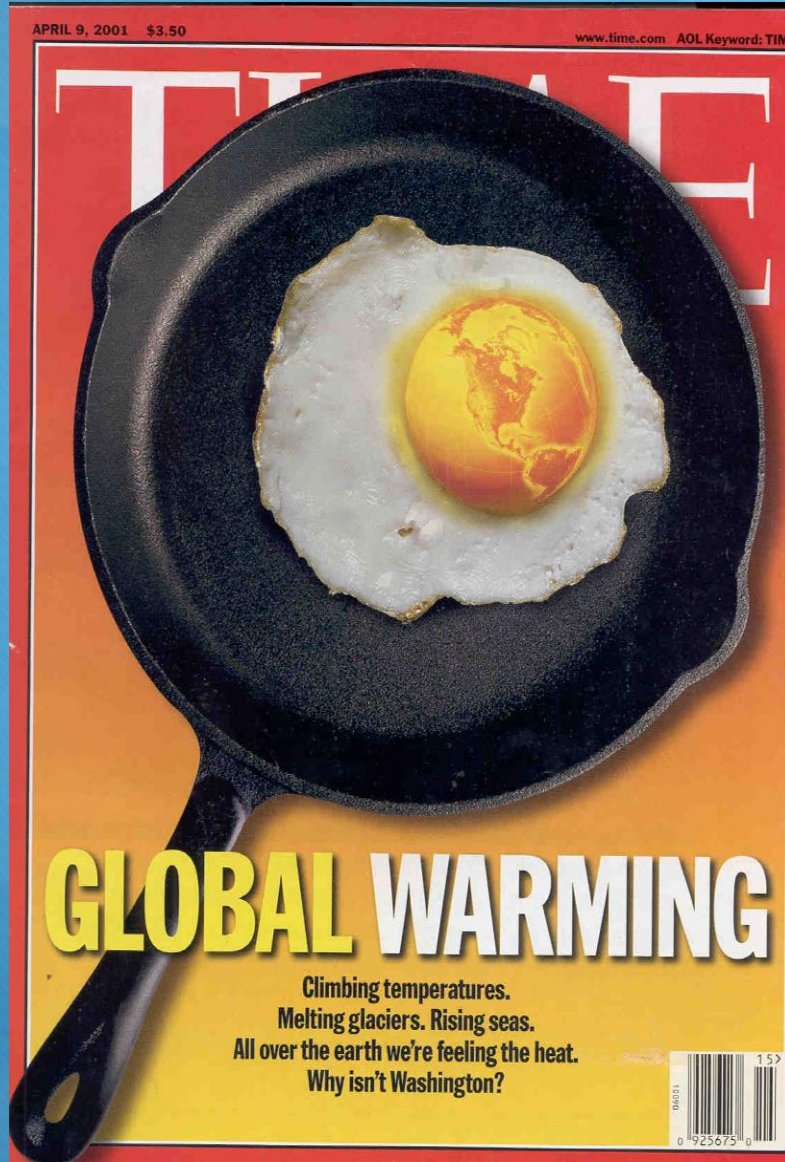
Humans

**Social,
Political, and
Economic
Factors**

**Ecological
Factors**

(Adapted from L. King)





Changing climates
impact disease
vectors & their
hosts

Greater impact on
poor socio-
economic
populations

Water wars emerge

EXAMPLE: developing an E coli O157:H7 vaccine.





How can we build capacity to better solve food systems' challenges?

First, we must consider the deep-seated root causes of ill health and inequities:

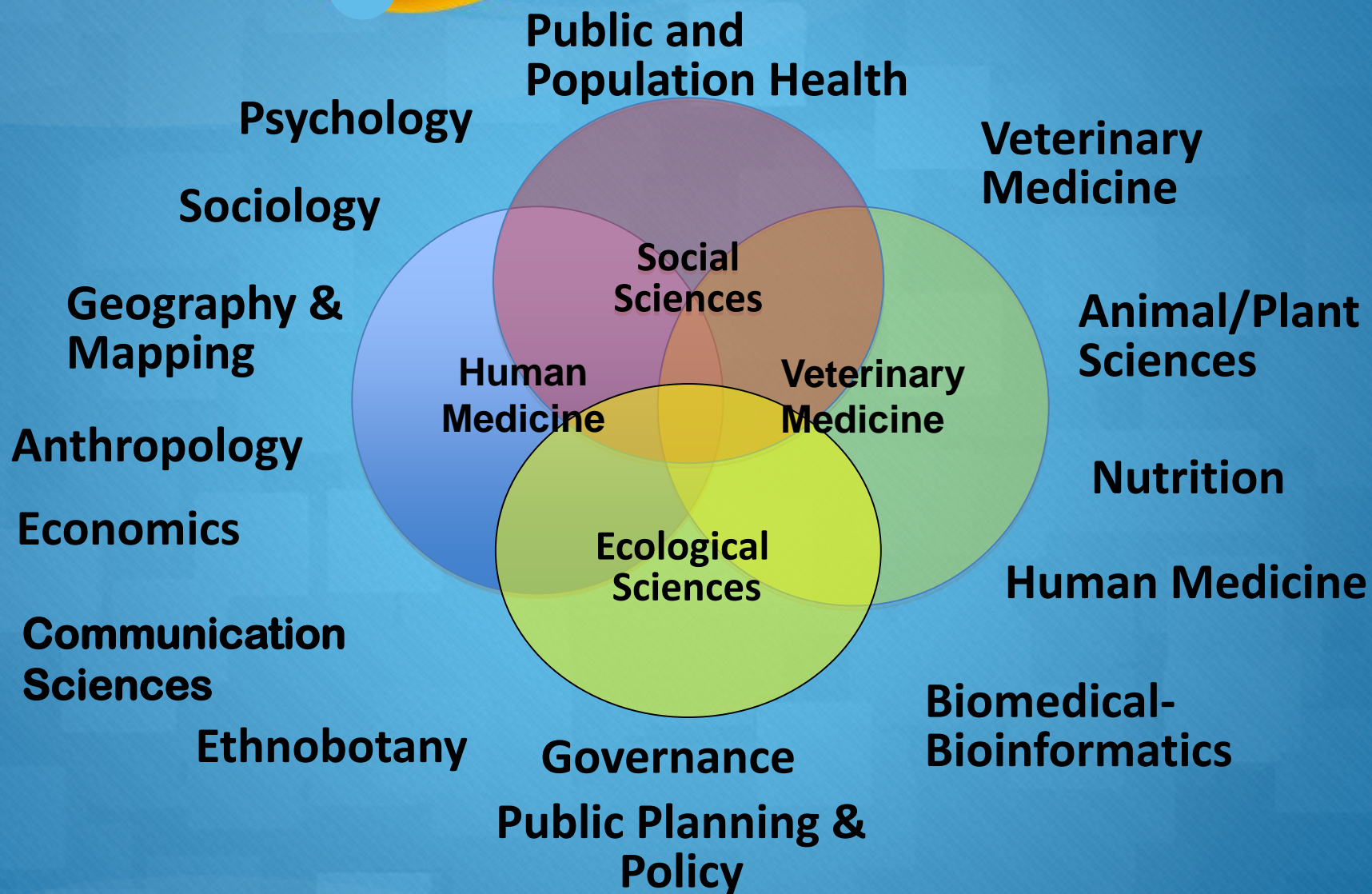
Social-cultural Psychological

Gender Economic

**Health Policies: Human, Animal,
Ecosystems**

Requires a *socio-economic, preventive* One Health approach

One Health Approach



One Health Transdisciplinary Approach: Collaborative & Interconnected

Multidisciplinary

Conceptual Framework



Conceptual Framework

Conceptual Framework

Interdisciplinary

Conceptual Framework



Conceptual Framework

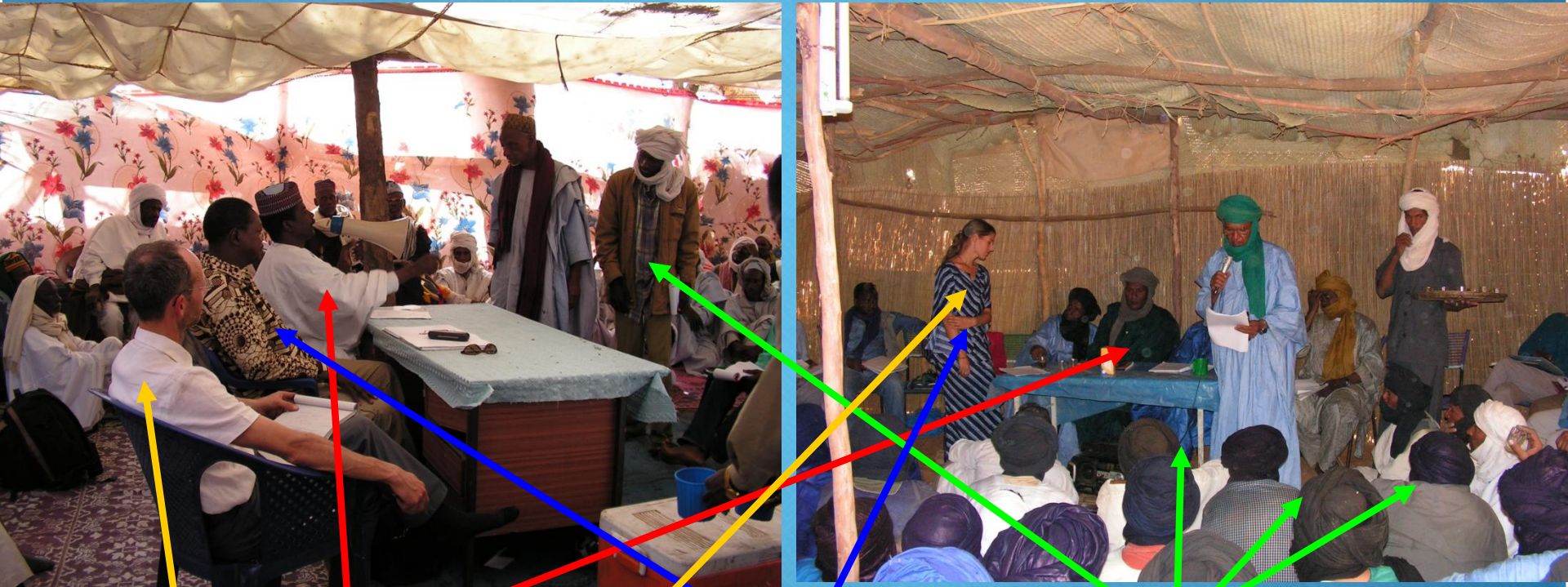
Transdisciplinary Leaders



Conceptual Framework
Inter-sectorial blending

Adapted from Craig Stephen; Lisa Allen

Applying the One Health Approach: Transdisciplinary Participatory Research



Decision makers

Scientists

Concerned population

OH TD Practitioners

Slide from J. Zinsstag



Dramatic Shift Needed in Academia

Encourage, support, create
opportunities for TD to
complement traditional
disciplinary research
approaches



Focus on prevention & root
causes of unsustainable
food systems



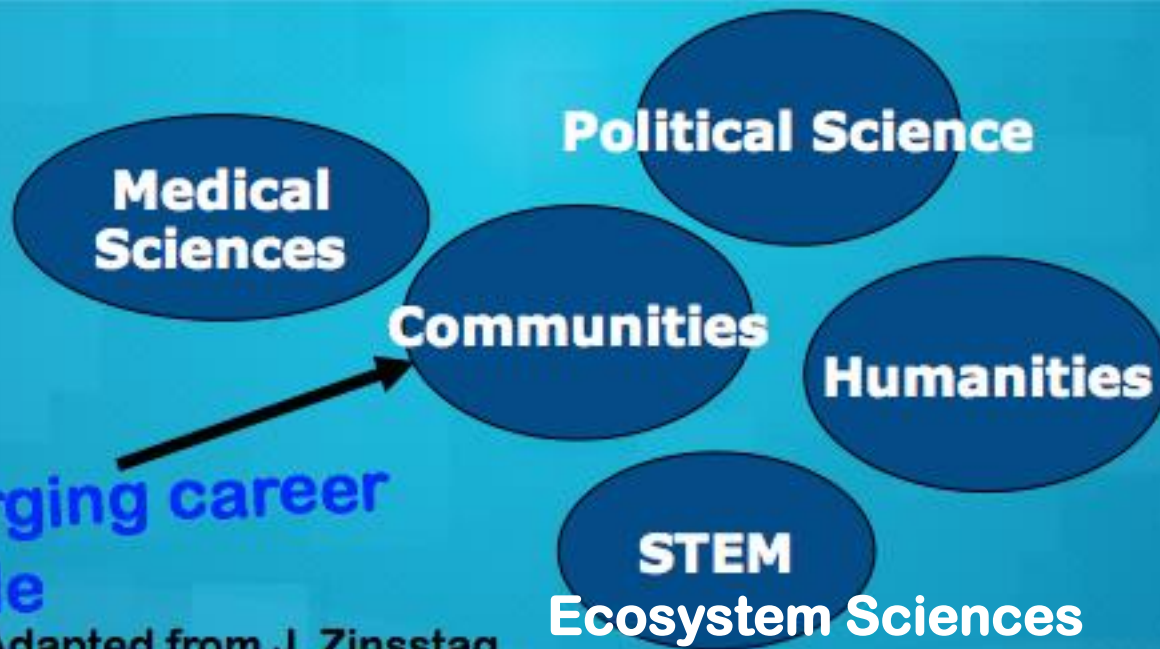
- Researchers and practitioners trained in *participatory and interactive processes linking natural and social sciences* often form the backbone of long-term collaborative networks.
- *Transdisciplinary practitioners* are as valuable to the project as other disciplinarians, and they need to be involved from the beginning of a project.
- Research-led universities especially can create enabling environments

Transdisciplinary One Health Practitioner Emerging Career



Emerging career profile

Adapted from J. Zinsstag



NNA Key Components

National Science Foundation Call for Proposals 2019: Navigating the New Arctic



Innovate for Arctic Observing



Advance Research and Modeling



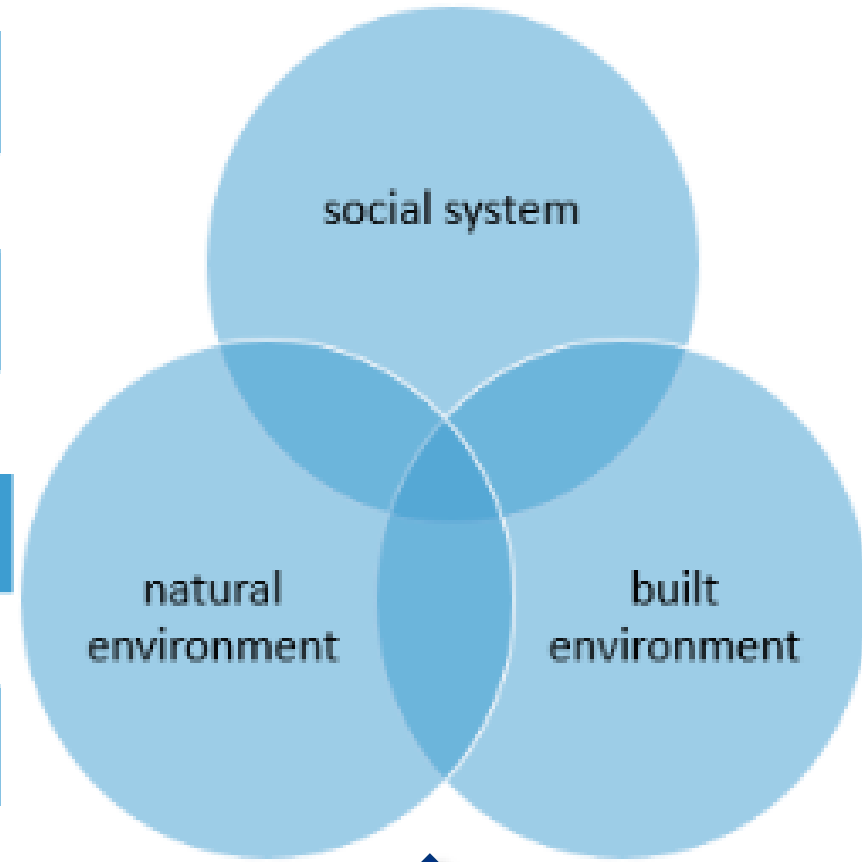
Co-Produce Knowledge



Build and Enable Partnerships



Advance STEM Education and Workforce



OH Transdisciplinary
Approach/Leadership



Barriers to One Health



7 BARRIERS to One Health Practice

- Long term relationship-building versus demands for quick results
- Disciplinary language and cultural differences
- Institutional “silos” lack interdisciplinary staff & shared reporting systems
- Budgetary constraints & unequal allocations
- Perceived power differentials among disciplines & programs
- Rewards lacking
- Lack of expertise in transdisciplinarity

Call to Action: Building OH TD

Capacity

**Performance
Rewards**

**Team
Funding**

**Collaboration
Co-location**

**Enabling
Environment**

Mentorship

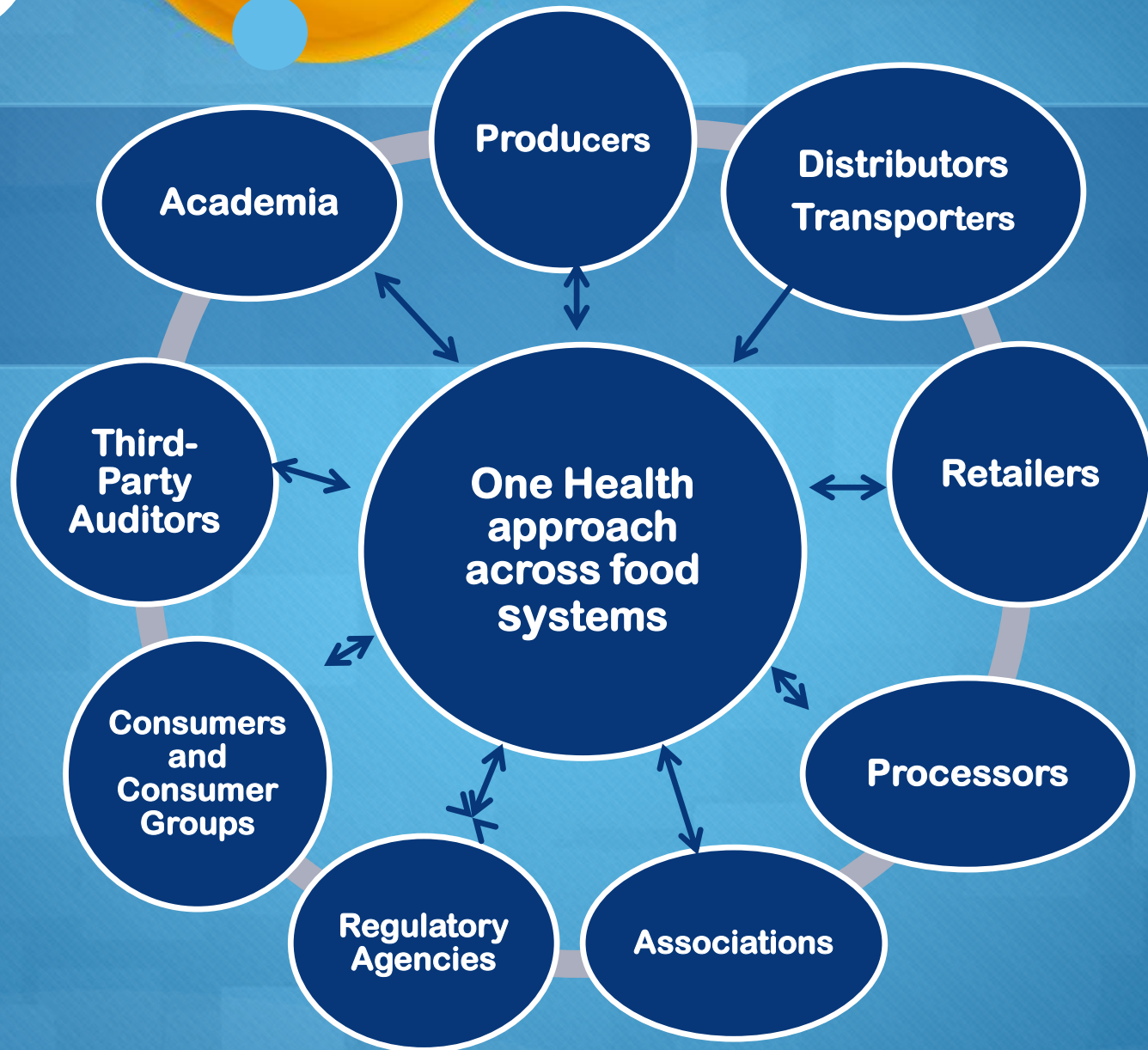
**TD
Curriculum**

Call to Action: Building OH TD Capacity- cont'd

- Creating a culture of integrative research
- Co-location and clustering of disciplines
- Create a OH overarching institutional mandate
- Strategically plan joint appointments
- Seed team grant funding
- Internal food systems administrative support
- Modify institutional reward system
- Create unique student career trajectories with community experience

Example: One Health TD Food Systems Practitioner Competencies

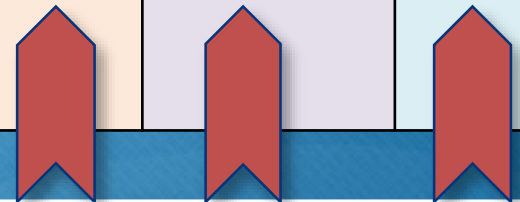
- Cross-sectorial problem solving abilities
- Critical thinking and objectivity; preventive focus
- Leadership, excellent written and oral communication, negotiation skills
- Knowledge of various food sectors' businesses, production challenges and consumer behavioral science
- Root cause analyses: consumers/communities
- Food system sciences, policies, regulations
- Discipline expertise
- Having certification in multiple food businesses (NZ)



Competency Based Food System Curriculum

<p>Leadership</p>	<p>Leadership Development – Employee to Senior Executive</p>			<p>Talent Management</p>	<p>Emerging Issues</p> <p>Public Health</p>	<p>Societal & Gov't Values & Ethics</p>
<p>Specialist</p>	<p>Practicum / on the job / recognition</p>					
	<p>Food Specialist</p>	<p>Plant Specialist</p>	<p>Animal Specialist</p>			
	<p>Training in common</p>					
<p>Journey</p>	<p>Practicum / on the job / recognition</p>					
	<p>Food Specific</p>	<p>Plant Specific</p>	<p>Animal Specific</p>			
	<p>Training in common</p>					
<p>Entry</p>	<p>Practicum / on the job / recognition</p>					
	<p>Foundation Food</p>	<p>Foundation Plant</p>	<p>Foundation Animal</p>			
	<p>Training in common</p>					

One Health Courses



Examples: Integrating OH Approach into Professional Career Development

- OH research groups, seminar series & workshops
- Develop international, cross-sectorial networks
- Publish OH approach in TD & disciplinary journals
- Subscribe to OH networks (e.g., OH Commission)
- Attend & present posters at TD conferences (Ecohealth, Int'l OH Congress, etc.)

Out Now From CABI Publishers

A practical book that examines the origins of One Health and describes how to put policy into practice.

Part 1: Theoretical Foundations

Part 2: Methods for the Assessment of the Animal-Human Linkages

Part 3: Case Studies from Research to Policy and Practice

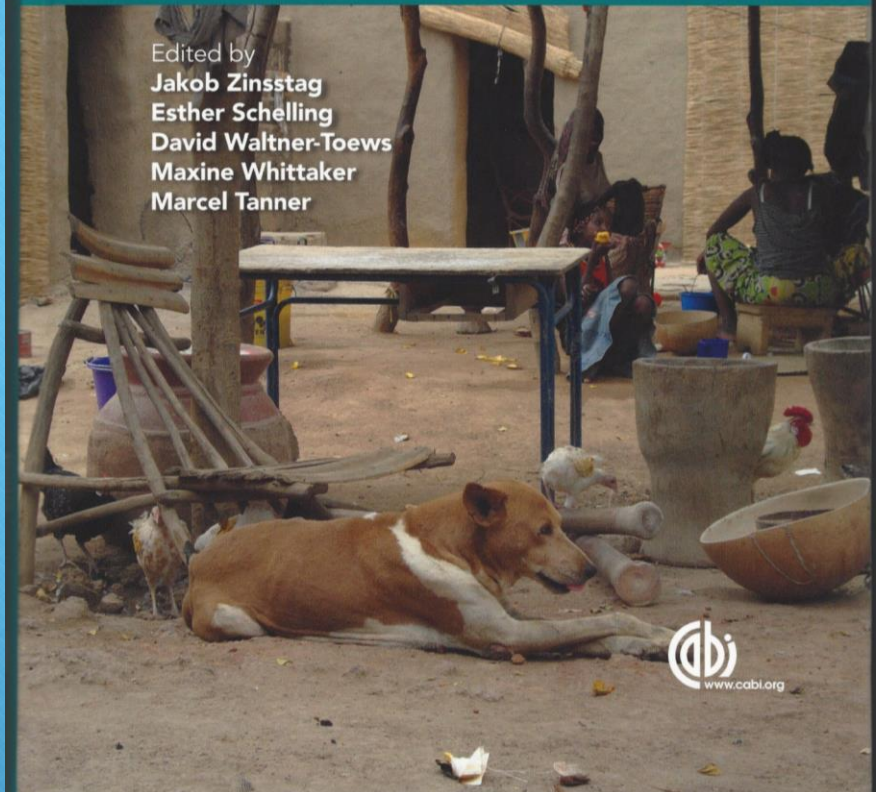
Part 4: Capacity Building, Public Engagement and Conceptual Outlook

84 Worldwide Contributors

One Health

**The Theory and Practice
of Integrated Health
Approaches**

Edited by
Jakob Zinsstag
Esther Schelling
David Waltner-Toews
Maxine Whittaker
Marcel Tanner



Today's Food Journey

- Complexity & challenges of sustainable food systems requires an inter-sectorial, ID preventive approach
- Urgency to develop a cadre of OH transdisciplinary practitioners to lead, facilitate inter-sectorial teams
- Barriers include “doing business as usual”
- Tools include developing innovative career path models and organizational mandate

What's in our future?



THANK YOU!!

**SONORAN DESERT SUNSET
TUCSON ARIZONA**

What is the OH Approach?

- It necessitates coordinated, collaborative, multidisciplinary and cross-sectoral transdisciplinary research at the animal-human-ecosystems interface
- It includes the broader ecosystem, as well as economic and social dynamics that **impact human, animal, and environmental health.**

Example of a transboundary, intersectoral research project event timeline

