

Ecohealth and One Health research in Southeast Asia: Examples, challenges, successes and outlook

Fred Unger, Hung Nguyen-Viet and Delia Grace
International Livestock Research Institute

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Presentation outline

- Ecohealth versus One Health and history in SE Asia
- Review of selected Eco Health & One Health initiatives
- Case study, learning by doing
- Final reflections, conclusions & way forward

Eco Health & One Health



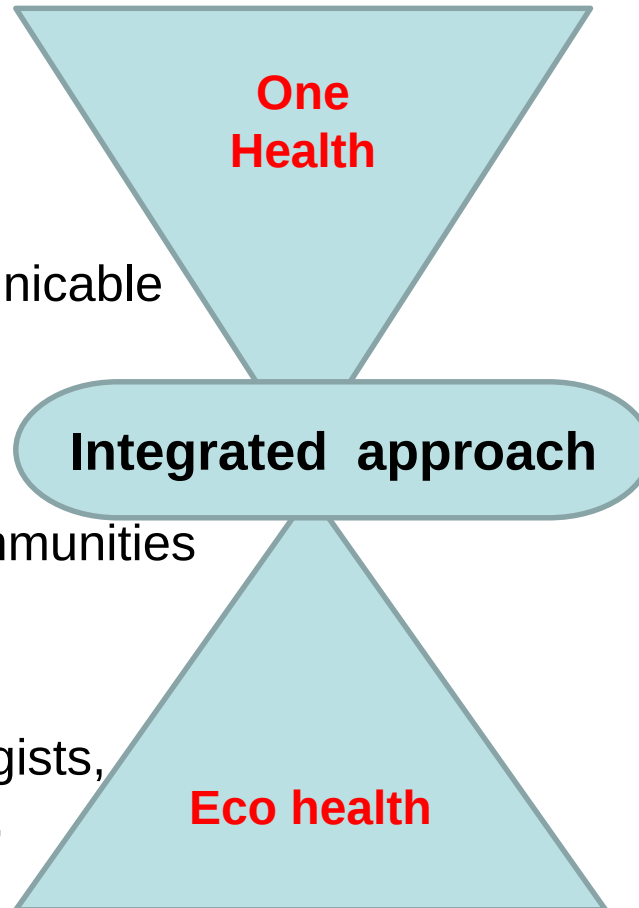
Various definitions (open to debate):
range from quite rigid to very flexible!

There is no single universally accepted definition of either “One Health” or “EcoHealth.” (Even the spelling of the terms is not yet standardized: some prefer to write ecohealth without any capitalization.)

Eco Health – One Health Contrast

Eco Health

Originated in biological
Ecology/land conversation
Complexity focus/systems
Communicable/non communicable
diseases
Pioneered from IDRC and
outside traditional helth
(heavy metal toxicity in communities
and related to mining)
'Bottom Up'
Vets, medicals, epidemiologists,
ecologists, social scientists,
philosophers, indigenous
perspectives, etc.



One Health

Schwabe's One Medicine
One world/One Medicine
(Zinsstag)
More quantitative focus
(animal/human/wildlife)
Communicable diseases,
zoonoses
Vets, medicals, some
ecologist
Currently institutionalized
(FAO, OIE, WHO)

OneHealth/EcoHealth in SE Asia

- One-Health
 - Various initiatives started in late 2000th in a response to HPAI International Ministerial Conference on Avian and Pandemic Influenza, New Delhi, Dec 2007, FAO, OIE, and WHO – to develop a joint strategic *One World, One Health* framework
 - IMCAPI, 2008 & 2010; Stone Mountain, 2010
 - Meanwhile wide range of initiatives emerged
- Eco-Health
 - Introduced by IDRC to SE Asia mid of the 2000
 - Initial approach through existing informal researcher networks
 - IDRC funded various projects: APAIR/APEIR, EcoEID, FBIL, BECA and EcoZD



- INDOHUN
- THOHUN
- VOHUN
- MYOHUN



Emerging Pandemic Threats Program

PREDICT • RESPOND • PREVENT • IDENTIFY



ACIAR

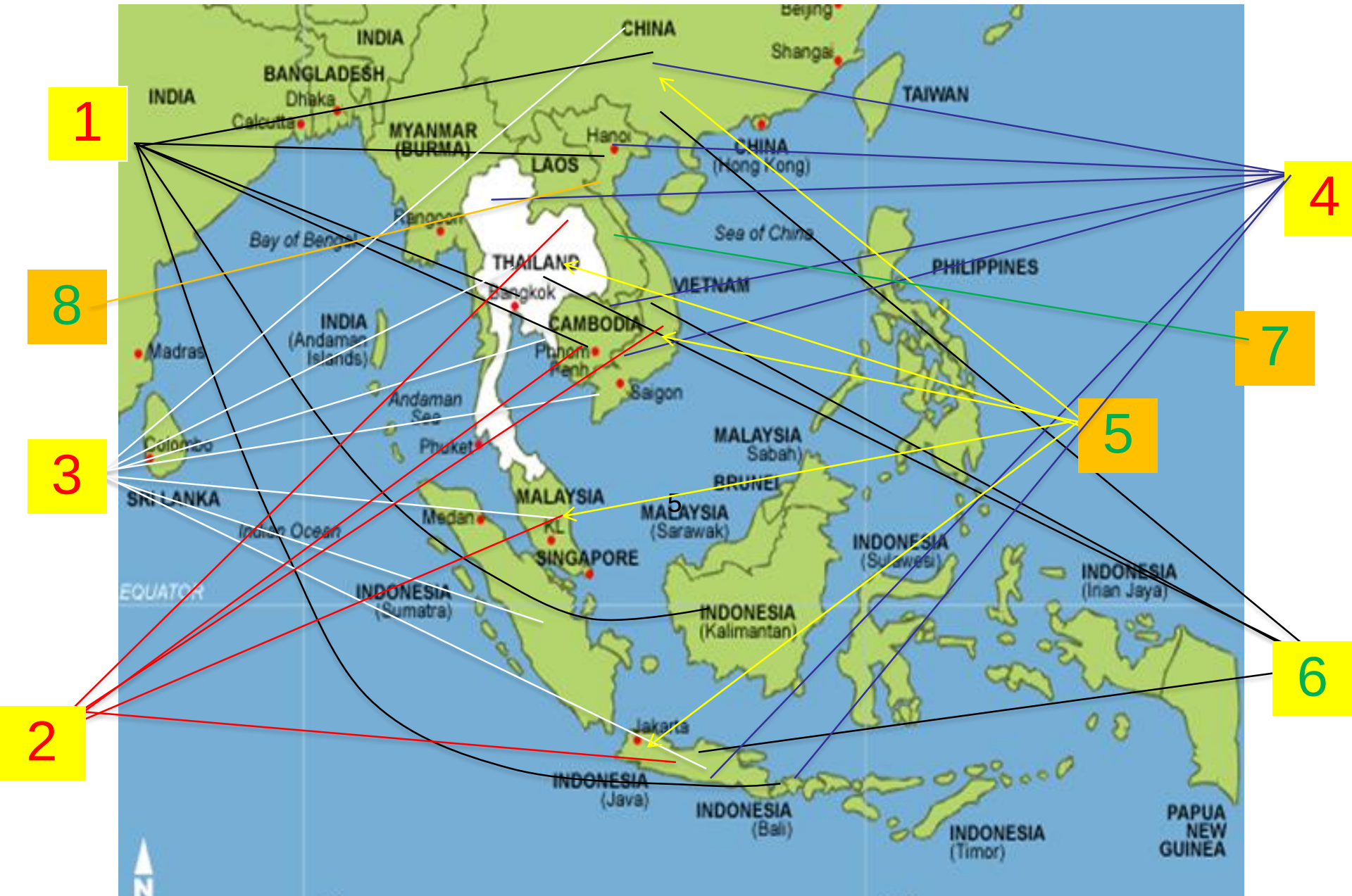
GHSA



Review of selected EH and OH initiatives

Initiatives were reviewed in terms of certain characteristics:

- Capacity building
- Action research component
- Focus on EH and or OH
- Networking demonstrated
- Funding dependency
- M & E tool and Impact assessment
- Research evidence in terms of peer reviewed papers
- Scaling out
- Policy engagement



Selected **EH/OH** initiatives in South East Asia (since 2006)

Summary on initiatives focus and characteristics

Focus & characteristics/ initiatives	1	2	3	4	5	6	7	8
Capacity building (general)	X	X	X	X	X	X	X	X
Curricula support		X			X		X	X
Action research funded	X	X		X		X	X	X
EcoHealth	X	X	X	X		X		
One Health					X	(x)	X	X
Strong networking	X	X	X		X	X	X	X

Summary on initiatives focus and characteristics

Focus & characteristics/ initiatives	1	2	3	4	5	6	7	8
External funded/co-funded	X	X	X	X	X	X	X	X
M & E tool	X	X	X	X	X	X	X	X
Impact assessment				(x)		(x)	(x)	
Scaling out						X		
Peer reviewed publication	X	X		X	X		X	X
Policy engagement	X			(x)			X	X

Review of EH/OH initiatives – lessons learned

- Most of initiatives focused on capacity building, others mainly on research or both
- Research results generated using an OH/EH approach in the field of EIDs or ZEIDs, but quality varying
- Limited peer reviewed papers, but high number of “locally” published papers
- Several networks established

Review of EH/OH initiatives – lessons learned

- Impact assessments on the OH & EH still limited
 - What has really changed and how
 - How this changes have been documented
 - How sustainable are these changes
 - Recognition of the value added (e.g. research trials)
- Initiatives need to operate more coordinated
- More policy engagement needed
- High donor dependency
- Private sector involvement is often missing
- Scaling out needs to be better shown

3. Specific case studies “learning by doing”

❑ From previous or ongoing ILRI projects in SE Asia

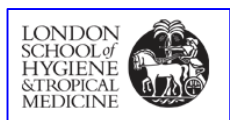
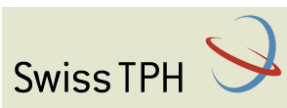
- EcoZD, project highlights and 2 case stud
- Pig RISK (Vietnam)

❑ Com Across

- Laos case study, parasitic foodborne zoonoses



Ecosystem Approaches to the Better Management of Zoonotic Emerging Infectious Diseases in Southeast Asia (EcoZD)



2007 – 2013 (++)

6 countries:

- Thailand
- Vietnam
- Cambodia
- Indonesia
- Laos
- China (Yunnan)

ZEID: Brucellosis, Salmonella, Rabies, Leptospiroses...



IDRC

CRDI

Canada

International Development Research Centre

Centre de recherches pour le développement international



ILRI EcoZD - general reflections

- ***Learning by doing*** EcoHealth approach
- Emphasis on capacity building - an approach where **teams made key research decisions** and were supported in implementation
- **Amendments** made based on own but also reflections of partners
 - 2 EHRC established
- **Outcome mapping** used for evaluation of **EH uptake**



Challenges across all teams

- Various definitions (EcoHealth and OneHealth)
- Identification of a common research interest
- Budget sharing
- Social science vs. biometric science expertise
- Qualitative vs. quantitative research – synthesis of both
- Basic research skills limitations (study design and sampling)
 - Two-dimensional capacity-building requirement (EH and technical)
- EH incorporation in the case studies – reality check –
 - often more Vet PH than EH



EcoHealth case study 1: Yunnan/China



Ecosystem approaches to better manage brucellosis and toxoplasmosis in Yunnan, China

Problem: Brucellosis emerging in Southern China

Brucellosis & toxoplasmosis in Yunnan

1. Identification of a common research topic

- Four different institutions with different locations, priorities and interests
- Approach: Consensus building and trust, allocate sufficient time (> 1 year)

2. No experience with an EH approach

- Strong silo-thinking and biometric driven research team, resulted in a continued demand for biological sampling

Approach: EH training and national EH champion

3. Perception on qualitative research tools

- Some team members had perception that qualitative research is less valid or scientific and therefore not useful

Approach: EH champion & learning by doing experience

* L ** M ***H Monitoring of EH uptake using Outcome mapping				
EH principles	+	-	Evaluation	Comments
Transdisciplinary research	Some changes within the research team	Still biometric, PH driven	**	
Participation	Various actors, groups & tools		**	EH champion, team highly motivated
Equity/gender	Ethnic minorities	Gender perspective weak	*	In all EcoZD team poor
Knowledge to action	Policy brief Policy meetings		**	Sometimes lost track as in Chinese
System thinking	EH framework	Not fully applied	*	Continuous challenge
Sustainability	Enhanced exchange at village level (Vet, PH, village heads, party committee) Networking		**	Positive side effects (village toilets)

Final reflections



FGD in the commercial dairy cattle farm and the village, Yiliang, April 2012

布氏杆菌病国家防控体系

1、国内动物疫病监测计划

2010年度，将布氏杆菌病纳入国内动物疫病国家监测计划，该计划监测的疫病包括：PAI、ED、LP、RS、CSF、猪链球菌H1N1等。布氏杆菌病是一种人畜共患病，对人类健康构成严重威胁。

监测时间：每年进行一次，具体时间由各地根据实际情况确定。监测数量：根据各地布氏杆菌病的流行情况，确定监测的畜群数量和头数。

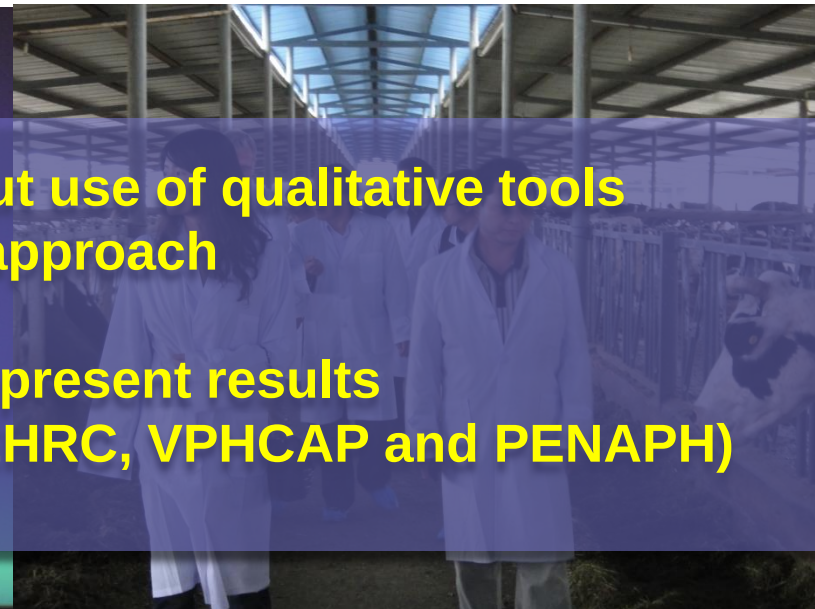
监测方法：按照国家标准（GB/T 18646-2002）进行，筛选检测用试剂，进行血清学检测。

检测阳性动物的处理：对检测阳性的动物，应立即进行隔离，并进行无害化处理。对阳性动物的密切接触者，也应进行检测。

检测阳性场点的处理：对检测阳性的场点，应立即进行消毒，并进行无害化处理。对阳性场点的密切接触者，也应进行检测。

监测和流行病学调查：对检测阳性的动物，应进行流行病学调查，了解其来源和传播途径。对阳性场点，也应进行流行病学调查，了解其传播途径。

Team initial sceptical but then excited about use of qualitative tools
Younger team members more open to EH approach
Finally one of the best teams
Incentive: Invited by FAO to Beijing to present results
Extended networking (e.g. EHRC, VPHCAP and PENAPH)



Case study 2:

Optimizing rabies control in Bali: An ecohealth approach



Case study 2:

Optimizing rabies control in Bali: An ecohealth approach

The problem:

- Rabies was an emerging zoonoses since its introduction
- Conventional control measures show limited success
- Prominent role of dogs in Bali society
 - Initial mass culling (Strychnine) faced strong obligations (local and international)
 - Obligations against general population control measures

Classical vet approach:

Vaccination in dogs and sterilisation if applicable

Case studies 2:

Optimizing rabies control in Bali: An ecohealth approach

Eco Health perspective:

Better understand:

- Social cultural relationship between dogs and the Balinese community
- Dog population in Bali and its dynamics.
- Dog ecology in Bali and measure its contact intensity with other animals and human.



Aim: Develop a model for sustainable Rabies prevention and control at *banjar* level through community empowerment.

Aligned with vaccination campaigns in dogs (FAO, LS services)

Ecohealth pillars

Review

Dog ecology Study
(Behaviour, fecundity
and demography of
dog)

Social Culture Study

Dissemination:
Pilot Village (A
*community-based
approach*) +
**Awareness in
Elementary School**

**System
Thinking**
(ecohealth
principle (EP) #1)

Knowledge to Action
(EP # 2)(Governor of
Bali)

**Trans-disciplinary
Approach** (EP# 3), e.g.
research from various
backgrounds

Participation (EP # 4)
Equity (EP # 5), e.g.
male more responsibly
in dog raising

Sustainability(EP# 6)
e.g. village cadre's
trained



Case study 2:

Optimizing rabies control in Bali: An ecohealth approach.”

Challenges and approaches to address them

Huge team

- Clear role for each member needed

Publications

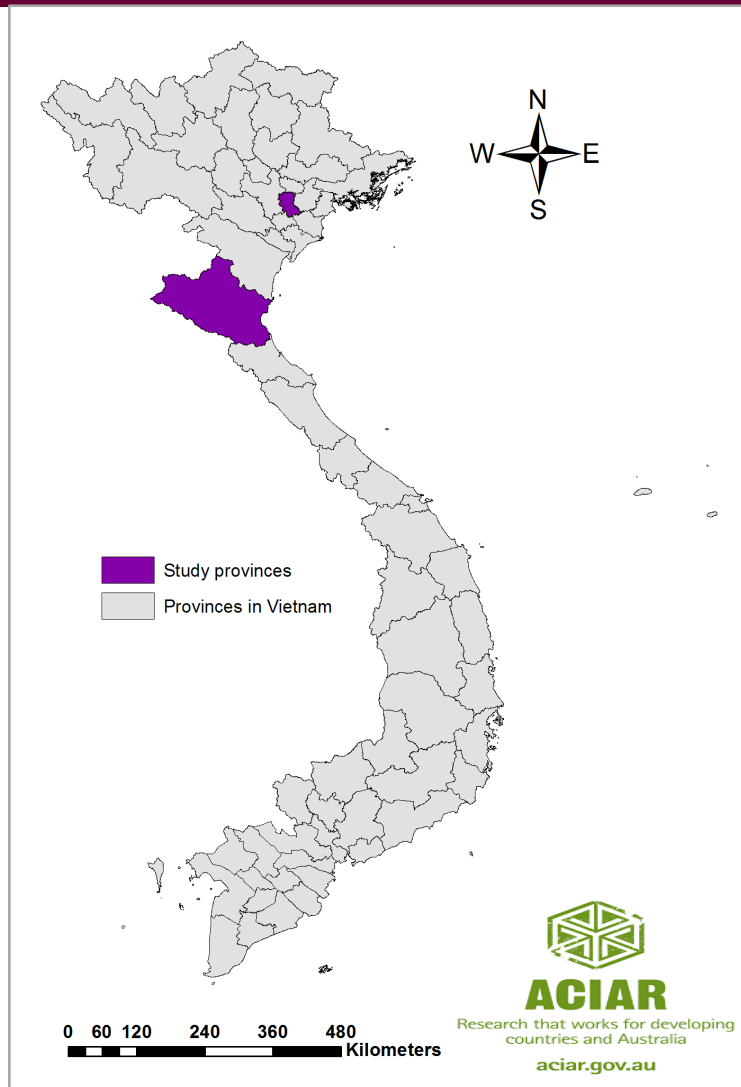
- Who publishes what in a (huge) transdisciplinary team
- Publications demanded for almost all team members
- Use of double lead authorships - some journals support this

Various peer reviewed papers in international journals (last Feb 2017)

Final evaluation

- Scientifically strong team members of various backgrounds
- Most of team members have EH experience from other IDRC studies

Case study 3: PigRISK project (2012-2017)



To assess impacts of pork-borne diseases on human health and the livestock and identify control points for risk management

Integrated approach

- Interdisciplinary team: vets, public health specialists, economists, animal scientists, modellers
- Data collected along entire pork value chain

Study sites

Two provinces

Farm-to-fork approach

Problem:

Food safety ranked by Vietnamese equal or higher than education and health

PigRISK project (2012-2017)



Challenges

- Joint surveys and analyses
e.g. Socio-economic aspects and biological surveys and cross-sectoral papers

Achievements

- Strong and sustainable interdisciplinary team even not primary One Health project

What makes it work

- Trust and confidence between team members
- Teams involved since the project design
- All activities jointly planned but still specific expertise kept by each team (also papers)
- Recognition as expert team by third party (other universities, Vietnamese food safety taskforce)

Case study 4: foodborne zoonoses

Lao long-term study on parasitic

The problem

- **Parasitic zoonoses** are often neglected disease but endemic in the Laos
e.g. trichinellosis, cysticercosis and liver fluke
- Some characteristics of animal production and food consumption habits in Laos likely promote zoonoses spread:
 - both human and animal populations live in in close proximity
 - a smallholder production systems with mixed species and no biosecurity
 - abattoirs and wet markets operating with rudimentary hygiene
 - widespread consumption of raw meat/fish



Case study 4: Lao long-term study on parasitic foodborne zoonoses

Team include expertise from:

- Animal science, public health, social science, later communication & environment added

Start up challenges:

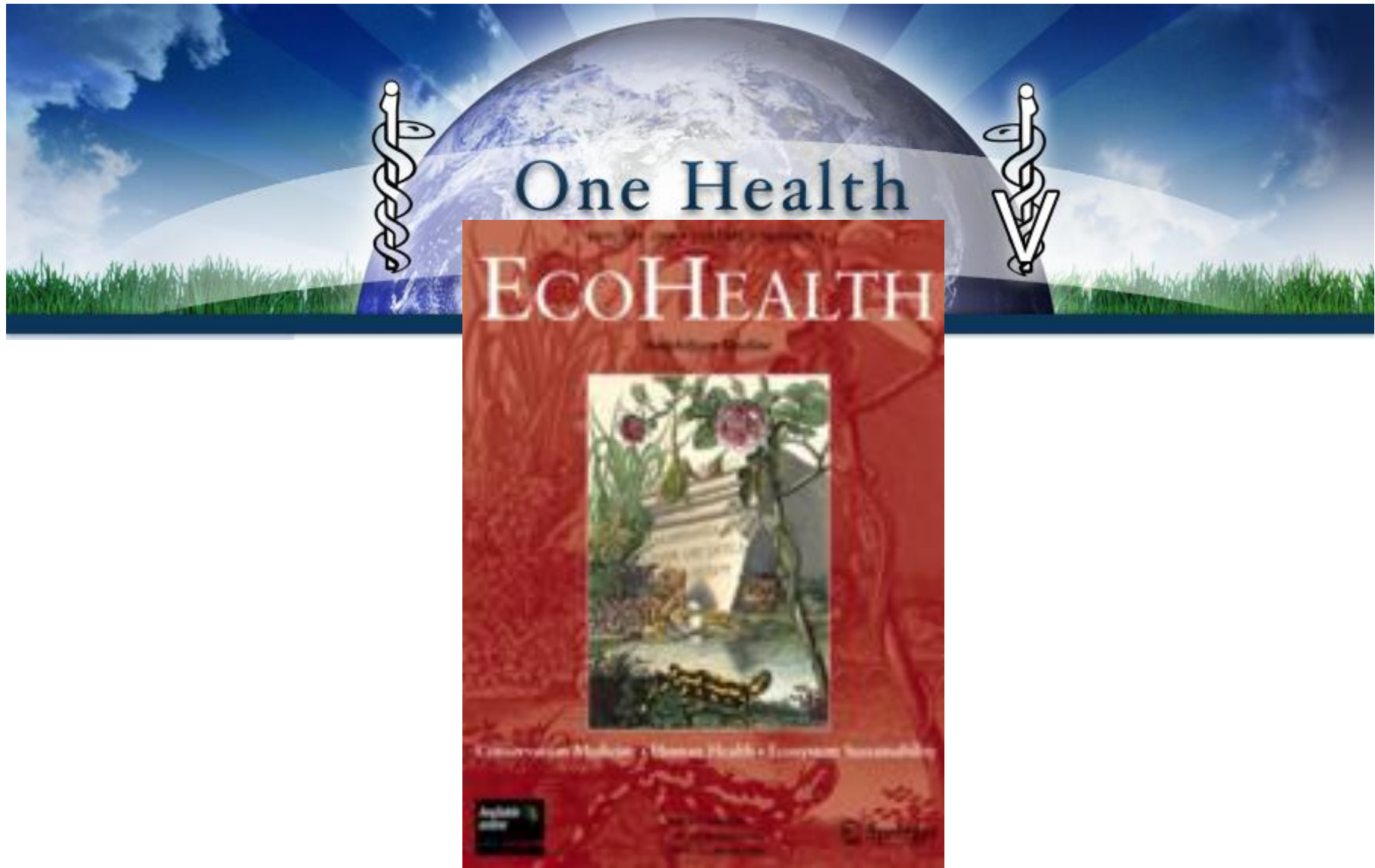
- Identification of the **research topic**
 - Disease focus, tendency to narrow it down to a specific disease
- Research objectives, activities and expected outputs disconnected
 - Tendency to narrow down groups involved e.g. only farmers initially involved
- Strong preference on the use of **biometric approaches**
 - Biological sampling, expressed repeatedly by team members
- Limited understanding of OH/EH principles

Action: OH/EH expert, sufficient time allocation, ComModel approach

Overall reflections from case studies

- OH and EH well perceived by teams
- Trust building & team consensus is key and takes time
- Continued reality check needed to keep track on OH/EH
- Easier to achieve early success with partners already experienced in EH e.g. Indonesia. More difficult but perhaps more significant, with teams with no previous exposure to multi-disciplinary approaches (e.g. China)
- Identifying of common vision and sharing of credits among team members and groups is key for success e.g. publications in a multidisciplinary team

Final reflections, conclusions & outlook



Research: “learning by doing“ for OH/EH case studies

Training: Various levels and modules to be offered (short courses – degree) to address a wide audience

- from grass root level practitioners to policy makers
- from project design to system thinking

M&E: Focus on monitoring behaviour change of partners

Sustainability: Increase own funding and interest from policy makers
Explore private sector involvement

Policy translation: ongoing efforts needed (policy briefs ect.)

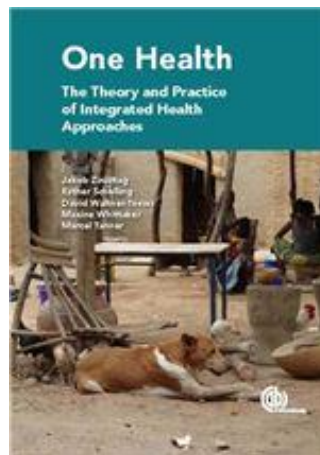
Dissemination and policy translation (national/regional)

- regular roundtable discussions/fora
- aligned to regional/national decision bodies (e.g. ASEAN)

Special thanks to:

- EcoZD team (former) and its coordinator Jeffrey Gilbert
- ComAcross team, Laos and its coordinator Aurelie Binot

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Box 30709, Nairobi 00100 Kenya
Phone +254 20 422 3000
Fax +254 20 4223001
Email ilri-kenya@cgiar.org

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