EcoHealth capacity building and applied research, challenges & lessons learnt from ILRI EcoZD

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Presentations overview

1. EH – pillars and principles
2. EcoZD
3. Case studies
Introduction: Ecohealth Theory

• IDRC’s Ecohealth Program Initiative is based on three methodological pillars (Lebel, 1994):
  – transdisciplinarity, participation, and equity.

• More recently, Charron (2012) expanded on the three pillars of Lebel, introducing six Key Principles of EcoHealth. Three of Charron’s principles are substantially similar to one of the pillars introduced by Lebel:
  – Systems thinking, Knowledge to action, Transdisciplinary, Participation, Equity, Sustainability

Ecohealth Research in Practice: Innovative applications of an ecosystem approach to health
System Thinking

System thinking suggests that the way to understand a system is to **examining the linkages and interactions between the elements that make up the system**

- In contrast to reductism which looks more in details of each part
- Helps to apply some order to the complex reality of health related to the social-ecological system

System perspective: **scale** is important

  e.g. time scale: daily routines, seasons, climate change

Challenges:

- Define **boundaries** of the system
- Choices between inclusiveness and feasibility based on time skills and capacity
- ILRI EcoZD/ComAcross: review objectives and activities

Modified after Charon 2012
Knowledge to action

Knowledge to action refers to the idea that knowledge generated by research is then used to improve health and well-being through an improved environment:

- Fundamental for an Ecosystem approach
- What different groups are interested to change
- Approaches are different, community versus policy makers
- Ideally research becomes an ongoing intervention process

**Knowledge moves both ways**
- Researchers pushing new knowledge into policies
- Policy is requesting new knowledge from researchers
- Collaborative exchange and knowledge platforms

- Generation of unintended (positive and negative effects)
  - Examples from EcoZD

Modified after Charon 2012
Participation

- **Aims to achieve consensus and cooperation** within community and scientific and decision-making groups
  - Define on who should participate and what will be there role
  - Mapping of potential actors, stakeholders or groups
  - Helps to identify existing barriers to change
  - Can provide option for negotiating concrete steps to move forward

Reality: Farmers are often the most disadvantaged group when facing rigid control measures
- Large scale versus backyard
- E.g. Vietnam
  - Policy against small scale slaughter slots or small scale farms in communities
  - Community have positive perception on local slaughterhouses

Modified after Charon 2012
Transdisciplinary research

- Inclusive vision of health problems by scientists from multiple disciplines, community and policy actors
  - Evolves the integration of research methodologies and tools across disciplines including none academics perspectives and (local) knowledge
  - From the first idea until dissemination/publication
  - Wide range of skills sets are needed which are usually not part of academic training
    - Consensus building
    - Facilitation …
    - Communication …
    - Mediation skills

Modified after Charon 2012
Gender and social equity

• Involves **analyzing the respective roles** of men and women, and various social groups;
  – Gender
  – Social cultural
  – Economic class
  – Age
  – Ethnic minorities
  – Marginalised groups

Why?
• Inequity in access to health care
• Woman held major responsibility for health of their families
• Anyhow, often little power on decisions how the HH income is used
• There is a need for more gender and social analysis in EH research

Modified after Charon 2012
Sustainability

- As research for development, EH research aims to make ethical, positive, long-lasting changes.
- Sustainability implies that changes are environmentally sound and socially durable.
- What will remain after the lifetime of the project?
- Short term needs might not be consistent with long term process for improvement of health.

Modified after Charon 2012
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)
Overview

General objective:
Increase the EcoHealth capacity in SE Asia targeting the risks and impacts of Zoonotic Emerging Infectious Diseases (ZEIDs) and how feasible options can be best implemented

- Appraisal & Consultative Process
  - Scoping Study
  - EcoHealth Uptake, Outcome Mapping,
    (ILRI – Teams & Teams to boundary partners)

- Balanced set of case studies and capacity built
- Networking
## Summary of outputs/outcomes

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Theme</th>
<th>Output</th>
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<tbody>
<tr>
<td><strong>Capacity building</strong></td>
<td>EcoHealth research: learning by doing</td>
<td>Over 100 researchers in SE Asia involved in 9 projects in 6 countries</td>
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<td>Training courses</td>
<td>3 major EcoHealth courses</td>
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<td>Short courses &amp; lectures</td>
<td>More than 20 lectures given</td>
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<td>Graduate fellows</td>
<td>PHD (1) and MSc (4)</td>
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<td></td>
<td>Training in research methodologies</td>
<td>Participatory learning; FGD; outcome mapping; risk analysis</td>
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<td><strong>Research disseminated</strong></td>
<td>Peer-reviewed articles</td>
<td>6 published in international journals 5 under preparation</td>
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<td>Presentations at conferences</td>
<td>&gt;60 presentations/posters at 14 conferences (Kunming, Maastricht ect)</td>
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<td><strong>Sustainable EcoHealth in the region</strong></td>
<td>Regional institutions</td>
<td>2 EHRC and CENPHER supported</td>
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<td></td>
<td>Training manuals</td>
<td>Two EcoHealth training manuals</td>
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<td><strong>Policy influenced</strong></td>
<td>National</td>
<td>5 teams engaged national policy makers, 4 sets of policy briefs</td>
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<td></td>
<td>Regional and international</td>
<td>Regional symposium for policy makers Engagement in FAO, WHO, OIE initiatives</td>
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</tbody>
</table>
With the focus on zoonotic diseases initial meetings were conducted with actors from MOH or MOA most of them not a focus of previous EcoHealth initiatives

Introducing *learning by doing* EcoHealth approach

It was easier to achieve early success with partners already experienced in EH e.g. Cambodia. More difficult but perhaps more significant, was this with teams with almost no previous exposure to multi-disciplinary approaches (e.g. China)

**Extended period of consultation** with teams of what EcoHealth involves and how to approach research
• Project did not come with pre-determined research questions, there was room for adaptation in the proposal
• Our emphasis on capacity building - an approach where teams made key research decisions and were supported in analysis and write-up.
• Multi-year process of inter-personal relationship-building
• Mid 2010 - critically reviewed the objectives (and outcomes) Amendments were made based on own but also reflections of partners – 2 EHRC established
Start up challenges

• Identification of research teams
  – Initial contacts were made with MOA & MOH due to focus on zoonoses. Most of actors, partners had doubts on the added value of EH.
  – Easier for teams with previous EH experience
  – More difficult for teams from countries with rigid top-down institutional environment (e.g. China and South Vietnam)

Approach: Repeated consultations, sufficient time allocation, sometimes build up on previous linkages
Start up challenges

Identification of a common research interest

- Often a painful and time consuming process
- **Entirely left with teams**, only focus on zoonoses was crucial
- Most critical in South Vietnam and China, classical silo thinking
- Who will lead & sharing of budgets

Approach: Various consultations and mentoring, EH training, sufficient time window, ILRI facilitated the process

Indonesia: Call for proposal, submitted proposals were evaluated by an independent expert group

CRA were processed after agreement on topic was achieved
Challenges

Recognition of the added value of other “none medical expertise” (e.g. social science or socio economic)

- Teams were led by MD’s or Vets with mainly biometric background
- To work with social scientist was new for most of them

Easier: Indonesia and Thailand, as interdisciplinary collaboration existed already
  e.g. CMU Vet Fac (Thailand); or UGM-KKN, CIVAS

More challenging: China and Laos

Approach: Specific and continued mentoring by EH champions, Training (EH, research methods, participatory tools, outcome mapping)
Continued challenges

EH incorporation in the case studies – reality check

– All teams conducted research with some elements of EcoHealth though for some it was more a bio-medical One-Health approach
– Others branded their research as EcoHealth but without major differences from conventional veterinary public health projects

Contributing factors to challenges:

– Lack of standard definitions of EcoHealth and One-Health led to unnecessary confusion.
– Concerns on translation of terms e.g. ‘transdisciplinary’ or “equity” – retaining of original meaning after translation to local languages
– Gender aspects were not recognised as important for most of the teams, again reflecting the predominance of biomedical thinking
Continued challenges

Approach to address challenges:

– EH mentoring - balanced between external EH support (experts) and recruitment of national or regional experts
– Experts covered: EH, policy translation, social science & gender, risk assessment
– EH training courses (at least one per year)
– Monitoring of EH uptake & outcome mapping
Final year of project, **each team** was evaluated (combined with OM)

1. **Managing use of social science** - for systems thinking via synthetic interpretation of research findings
   **Low ability** is characterized by:
   limited integration of social science; limited integration of systems thinking; minimal linkages with practice…
   **High ability** is characterized by:
   high integration of social science/ systems thinking, good transdisciplinary integration of research studies; significant linkages with practice; …

2. **Managing knowledge exchange & decision-making**

3. **Managing project administration** – for time & resource allocation

4. **Managing organizational culture & host institute norms**

   Evaluation: L-, L+, M-, M+, H-, H+
Continued challenges

• Deficits in generic research facilitation skills for some teams
  – Proposal writing, analysis, budgeting, publications

• Synthesis
  – Synthesize quantitative and qualitative results
  – Interdisciplinary data base, not achieved!

• Policy engagement
  – Mentoring by policy expert from IFPRI, 5 policy briefs
  – Some teams strong in engagement of policy makers
e.g. Thailand slaughterhouse

• EH report
  – Required from donor
  – Document team changes in aspiration of EcoHealth, less technical
  – Sometimes hard for the teams but useful to keep EH spirit in mind
Two-dimensional capacity-building requirement

- EH concept (International, regional EH experts)
- Technical (implementation/methodological)

Proposal write shops, data analysis write shops, paper write shops (ongoing)
## Country teams & case studies

<table>
<thead>
<tr>
<th>Country</th>
<th>Zoonoses</th>
<th>Tool</th>
<th>Expertise</th>
<th>Challenge</th>
<th>Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>Diarrhea in human and animals</td>
<td>FGD, IDI, QX, Review, biological sampling</td>
<td>MD, Vet, Socio Econ, Social-Science, villagers</td>
<td>Disease prioritization Risk analysis</td>
<td>EH champion Consultant</td>
</tr>
<tr>
<td>Vietnam</td>
<td>Lepto in human and animals</td>
<td>FGD, IDI, QX, Review, biological sampling</td>
<td>MD, Vet, Socio Econ, Social-Science Villagers</td>
<td>Disease prioritization</td>
<td>Mentoring ILRI Hanoi</td>
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<tr>
<td>Country</td>
<td>Topic</td>
<td>Tool</td>
<td>Expertise</td>
<td>Challenge</td>
<td>Solution</td>
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<tr>
<td>THL/VN DLD, MOH, MARD, NIVR, University</td>
<td>Hygiene in small scale chicken SH</td>
<td>FGD, IDI, QX, biological sampling</td>
<td>MD, Vet, Socio Econ, Social Science</td>
<td>Initial proposal very biometric</td>
<td>EH mentoring (Fred, CMU)</td>
</tr>
<tr>
<td>Laos DLF, PH, University</td>
<td>Pig zoonoses &amp; prod. Diseases</td>
<td>QX, biological sampling</td>
<td>Socio Econ, MD, Vet, Villagers</td>
<td>Aligned to another project (ACIAR) Disease prioritization</td>
<td>Various consultations (JeffG at CIAT Loas)</td>
</tr>
</tbody>
</table>
Eco ZD case study:
Brucellosis/Toxoplasmosis in Yunnan
1. Identification of common research topic
   • Researchers from 4 different institutions with different research priorities, e.g. AI, Toxoplasmosis, Brucellosis, M. bovis, Hepatitis DHF ect.

Approach:
   • Various meetings including stakeholders but also community visits, some with ILRI others not
   • Allocation of sufficient time (6-9 month)
   • Facilitation and consensus building skills, Toxoplasmosis & Brucellosis selected (our choice would have been probably different)
2. Limited or no experience with an EH approach

- Strong silo-thinking and biometric driven research team
- Focus was on biological sampling
  - Team went even to the field and collected samples before the CRA was signed, unclear sample design and research question
- No experience with qualitative methods

Approach: Frequent visit of ILRI scientist and support by an EH champion (Fang Jing)
Training on FGD and IDI tools
Relationship and trust building
Gained ownership by local authorities
3. Synthesising qualitative and quantitative research results

- Focus was on collection and analysis of biological samples and quantitative data
- No experience with qualitative analysis

Approach: EH champion provided repeated training
First part of analysis strongly guided/done by EH champion e.g. In depth interviews in village doctors
Further analysis done jointly (IDI, butchers)
All others done by team (IDI, village Vets) and FGD
Other challenges:

- Hierarchical differences between researchers
- Unfortunately the most “EH open” researcher was the youngest and also facing EN language difficulties
- Strong deficits in paper writing (mainly due to language barriers)

Approach: As mentioned before & identification of incentives, paper write shop (last week)
Brucellosis & Toxoplasmosis in Yunnan

Contributing factors for success:

- Highest motivated team, use of qualitative exited the team
- Invitation to national and international meetings – strong incentive (EH researchers)
- Upcoming publication (international journal)
- Extended networking (CMU, VPHCAP, PE)

After all one of the best teams together with the Indonesian team
<table>
<thead>
<tr>
<th><strong>EH principles</strong></th>
<th><strong>+</strong></th>
<th><strong>-</strong></th>
<th><strong>Evaluation</strong></th>
<th><strong>Comments</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Transdisciplinary research</td>
<td>Some changes within the research team</td>
<td>Still biometric, PH driven</td>
<td>****</td>
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</tr>
<tr>
<td>Participation</td>
<td>Various actors, groups &amp; tools</td>
<td></td>
<td>****</td>
<td>EH champion, team highly motivated</td>
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<tr>
<td>Equity/gender</td>
<td>Ethnic minorities</td>
<td>Gender perspective weak</td>
<td>*</td>
<td></td>
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<tr>
<td>Knowledge to action</td>
<td>Policy brief Policy meetings</td>
<td></td>
<td>****</td>
<td>Sometimes lost track as in Chinese</td>
</tr>
<tr>
<td>System thinking</td>
<td>EH framework</td>
<td>Not fully applied</td>
<td>*</td>
<td>Continuous challenge</td>
</tr>
<tr>
<td>Sustainability</td>
<td>Enhanced exchange at village level (Vet, PH, village heads, party committee) Networking</td>
<td></td>
<td>****</td>
<td>Positive side effects (village toilets)</td>
</tr>
</tbody>
</table>
Challenges
The problem: Brucellosis & Toxoplasmosis is in Yunnan

**Public health** authorities (hospitals and local) (IDI)
- Review of existing information
- General Z knowledge
- Specific action B & T patients
- Collaboration with PH

**Survey:**
- Dairy farms (milk)
- People at risk (serum)

**Farmers** (QX)
- Production data
- AH and disease prevention
- Reproductive disorders
- Zoonoses and OH

**Vet officers/stations** (IDI)
- Review of existing information
  - General Z knowledge
  - Specific action B & T
  - Control
  - Collaboration with PH

**Villagers** (with/without livestock) (FGD)
- Animal husbandry
- Zoonoses
- Risk factors
- AH services
- PH services
- Source of information

**Past unit, milk vendors** (FGD):
- Zoonoses knowledge
- Quality control
- Sanitation
- Inspection by authorities

**Hospital case review:**
- Clinical cases
  - Literature review

**Butchers** (IDI)
- General Z knowledge
- Specific knowledge B & Toxo
- Health check and status
- Hygiene and training
- Waste management
Case studies: added value of Eco health
Optimizing Rabies Control in Bali: An Ecohealth Approach.”
Identification of a common research topic:
• Lead by team (CIVAS) and based on a call for proposals
• Rabies is an emerging zoonoses since its introduction
• Conventional control measures show limited success

Objective:
to help the government of Bali in controlling rabies in dogs through better understanding of the dog population, dog behavior in Bali and its relationship with the local community

Various stakeholders and groups involved:
MD, Vets, Social Science, Communities, Environment sector, tourist sector, media, schools, village cadres, private sector, political perspectives
Eco Health story:

- EH changed the way the team planned research and dissemination.
- Boundary partners (rabies cadres and heads of village) incorporated the rabies control programme in their village traditional law, and showed willingness to continue this model of Village Rabies Working Group (VRWG) by their own fundraising programmes after EcoZD.
- Provincial Livestock Service Office were convinced to support an island-wide training programme for VRWG of two people from each village (covering the 723 villages).
## Case studies: Rabies in Bali

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<tr>
<td>Changes within the research team</td>
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<tr>
<td>Participation</td>
<td></td>
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<td>+</td>
<td>***</td>
</tr>
<tr>
<td>Various groups and participatory tools, song, video</td>
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<td></td>
<td>-</td>
<td>Strongest community involvement</td>
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<tr>
<td>Equity/gender</td>
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<tr>
<td>Gender perspective</td>
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<tr>
<td>Knowledge to action</td>
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<td>+</td>
<td>**</td>
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<tr>
<td>Policy brief</td>
<td></td>
<td></td>
<td>-</td>
<td>Supported by consultant</td>
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<tr>
<td>System thinking</td>
<td></td>
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<td>+</td>
<td>**</td>
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<tr>
<td>EH framework</td>
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<tr>
<td>Sustainability</td>
<td></td>
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<td>+</td>
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<tr>
<td>Expansion of involvement of village cadres</td>
<td></td>
<td></td>
<td>-</td>
<td>Publications, schools</td>
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<tr>
<td>Involvement in new EH initiatives</td>
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Lessons learned

• Keep room and time to adapt approaches
• Allocate sufficient time to expected changes of teams operations (EH) & boundary partners
• Identify & engage potential EH champions
• Trust building & incentives
• Continued mentoring on how to best incorporate EH in the proposals, field work and analysis
  – Balanced use of external & national experts
• Develop and use an evaluation system
• EH stories should be developed and documented
• Perhaps use a specific EH reporting format which encourages the team to report not technical as usual
Special thanks to the former EcoZD team and its partners
In particular: J Gilbert, H Nguyen, R Asse, P Mehta, K. Tohtubtiang, L Lapar, D Grace

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• THOHUN
• VOHUN
• MYOHUN

Modified from Hung Nguyen, 2013