Ecohealth, One Health, and Sustainable Development: a Practical Approach

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A STATE: “... of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (WHO Constitution, 1948).

What is Health?

“The extent to which an individual or group is able, on the one hand, to realize aspirations and satisfy needs; and, on the other hand, to change or cope with the environment.” (WHO, 1984).
The Global Context for Health
Childhood Vaccinations
Increased Population
Economic Development
Increased Consumption
War

More Food
Agricultural Intensification
"Resource" Use
Land Restructuring
Water Infrastructure
Draw down water table

Species extinctions
Economic Trade & Connectivity
Emerging Diseases
Obesigenic Culture
Economic disparity

Ecological Fragility

Economic Instability
Localized Pollution
Climate Instability
Increased Consumption
The problem of feedbacks: solving or changing problems?

Divergent Paths of Salmonellae
Sal. typhi and non-typhoid Salmonella

- Typhoid
- Salmonellosis

Graph showing changes in typhoid and salmonellosis rates over time.
265 patients with viral encephalitis

105 fatalities

- 1 million pigs were culled.
- 800 pig-farms were demolished.
- 36,000 jobs lost
- Over $120 million exports lost
SE Asia 1980s & 1990s

- Economic Boom
- Change in diets - Increased demand for meat
- Increased density of livestock, mass distribution
- Increased encroachment on wetlands and flyways
- Faster and more international trade.
- And then?
Complexity & Unexpected Outcomes
Wicked problem

• A problem that is difficult to resolve because of incomplete, contradictory, and changing requirements that are often difficult to recognize.

• Because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other problems.

• Wicked problems occur because the world is fundamentally complex.
I think I found the Problem!

I’d better go back to school

Neither
Some responses to Complexity

Focusing on Outcomes

• Ecological integrity
• Biodiversity conservation
• Sustainable livelihoods
• Resilience
• Ecosystem health
• Healthy Communities
• Poverty reduction
• MDGs
• **ONE HEALTH**

Focusing on Processes

• Systems Design Engineering
• Soft Systems Methodology
• Participatory Action
• Collaborative Learning
• Adaptive Environmental Management
• Appreciative Inquiry
• The Ecosystem Approach
• **ECOHEALTH**
One Health: The Outcome We Want

• One World One Health: A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface.

• Integrating human, animal and ecosystem health. (are these compatible?)

• *How do we achieve this?*
Ecosystem approaches to Health

• **Systemic, participatory** approaches to understanding and **promoting the health and wellbeing of people, animals and ecosystems** in the context of **complex social-ecological interactions**.
One Health: Can we make a diagnosis?

**Presenting Complaint:**
Why are you here?

**Clinical exam:**
Describe the system/
Identify owners

**Diagnosis:**
what, really, are the problems?

**Set Goals & Plans to achieve them**

**Monitor & Re-assess:**
indicators

**Implement feasible, desirable changes**
Entry point

Presenting Issues

The Given History

Analysis of:

Stakeholders

Issues

Governance

Collaborative Learning and Action

Monitoring and Evaluation:

Implementation

Design of an adaptive approach

Trade-offs & Solutions. Where do people want to go?

Understanding Social-Ecological Systems

Understanding Nature

Understanding Culture

What are the options: constraints and opportunities
Skills from Success (There is NO BOX!)

- **The Facebook Approach**: Cultivate friends and networks (think laterally, listen, talk)
- **The Google Approach**: Cultivate peripheral vision (surveillance)
- **The Apple Approach**: Cultivate nimbleness
- **The Twitter Approach (Arab Spring)**: Collaborate on action with people at multiple sites and different perspectives for a common goal
What Changes in a Complex Systems Approach?

- Our understanding of the world (uncertainty)
- The roles of experts and investigators (Facilitators in an expanded peer group – Communities of Practice and networks of trusted colleagues and friends)
- Decision-making, governance, management, monitoring (Innovative and flexible)
- Measures of quality or “success”: What are we trying to achieve? - multiple outcomes simultaneously
It Can Be Done: It Has Been Done