



Definitions and scope of One Health/Eco-Health approaches

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Introduction

- Global health is facing challenges from a multitude of interconnected infectious and non infectious diseases at the human-animal-ecosystem interface
- zoonotic diseases (emerging or not)
 - 60% of human diseases are zoonotic
 - 75 % of EID has an animal origin
 - **Flu**
 - Birds, pigs, etc.
 - **Nipah**
 - Bats, pigs
 - **Rift Valley fever**
 - Ruminants
 - **Tuberculosis**
 - Bovines, buffaloes....
 - **Leptospirosis**
 - Rodents, dogs, etc.
 - **Ebola**
 - Monkeys, bats



But not only....

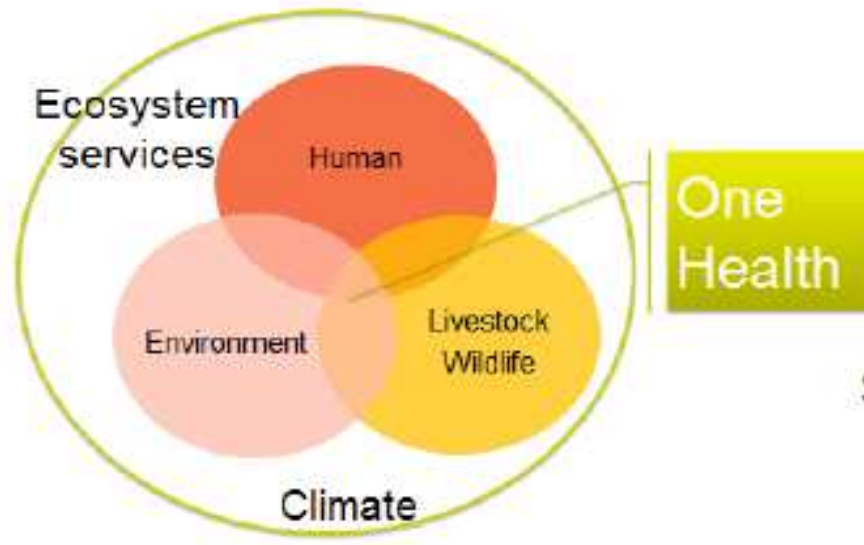
- diseases of public health concern
- diseases with food safety impact
- diseases with agricultural productivity impact or that pose a significant threat to trade

⇒ the issue is more than only controlling zoonosis ;

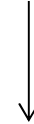
⇒ also fight for **food safety** and **security**, **sustainability of production systems**, **protection of biodiversity**, **genetic diversity** and **human well-being**



From One Medicine to One Health paradigm



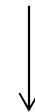
One Medicine (Schwabe, 1984)
=common body of knowledge
in anatomy, virology, pathology,



Close relationship between human,
animal and ecosystems
=>holistic, transdisciplinary,
collaborative approach

One World One Health

12 Manhattan principles, 2004



...Include ecology, public health,
sociological, anthropological
dimensions (Zinsstag, 2005)

One Health

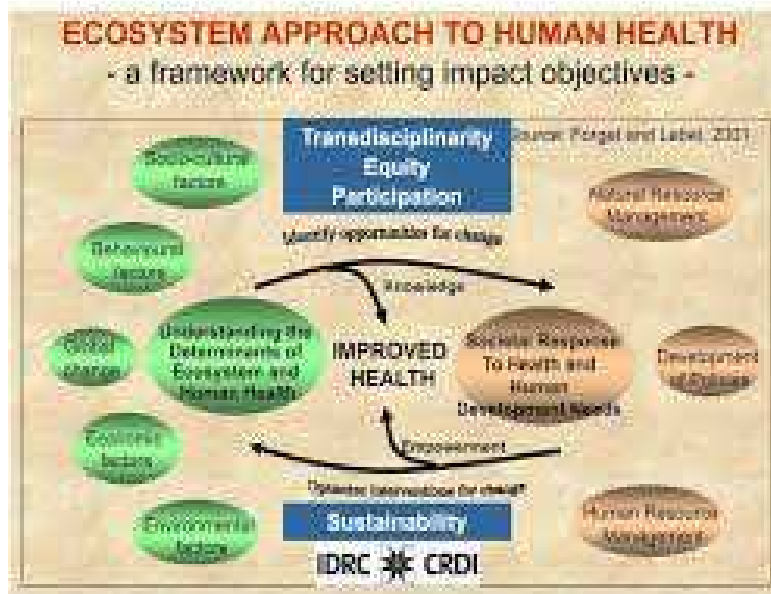
One Health



Worldwide strategy for expanding interdisciplinary collaborations and communications in all aspects of health care for humans, animals and the socio-ecological environment.

- mainly concerned with biomedical questions and is historically more health science-driven
- evolves on a large scale
- official level (WHO, FAO,...) = **Top-down** approach

EcoHealth



Transdisciplinary approach to address public health issues attributable to **environmental conditions** and leaning rather on **social conditions** than on **biomedical variables**

- Initially designed by disease ecologists
- linkages between **ecosystems, society and health** of animals and humans (Rapport, 1998)
- 3 key principles (Charron, 2012): **transdisciplinarity, participation and equity**
- More pragmatic level and local scale
- **Bottom-up** (health issues identified by communities)

Same wine in two different bottles?



- holistic understanding of health beyond the purely biomedical, linking natural and social environments

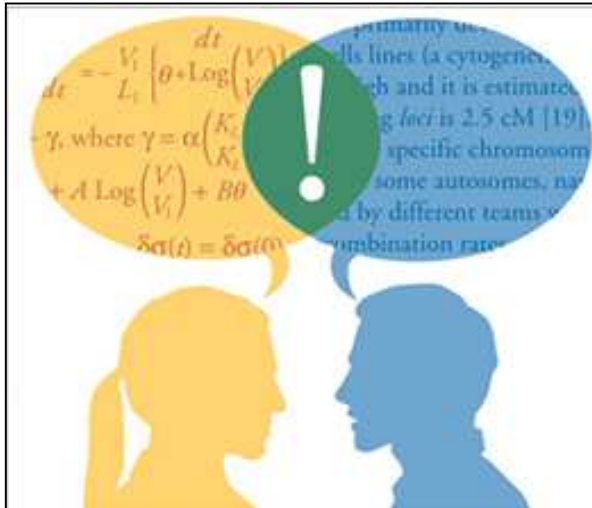
-to integrate scientific disciplines in aim to mitigate risks threatening ecosystems and public health, including veterinary public health

-are informed by the conviction that health concerns must be addressed at the interface

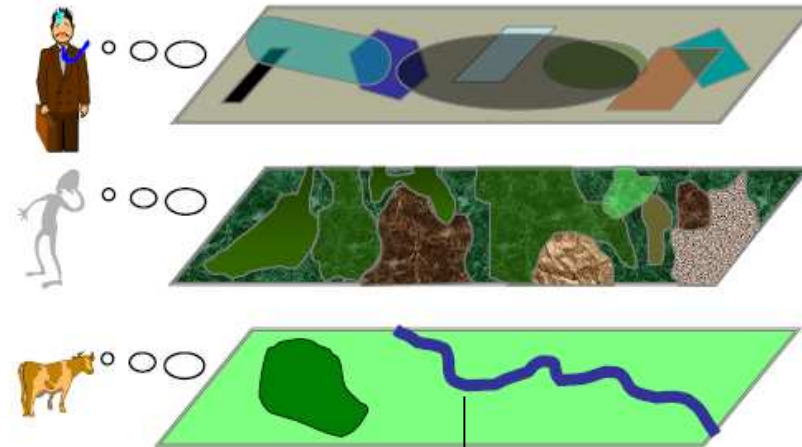
-struggle to clearly define the (respective) boundaries of their concepts



Same challenges!!

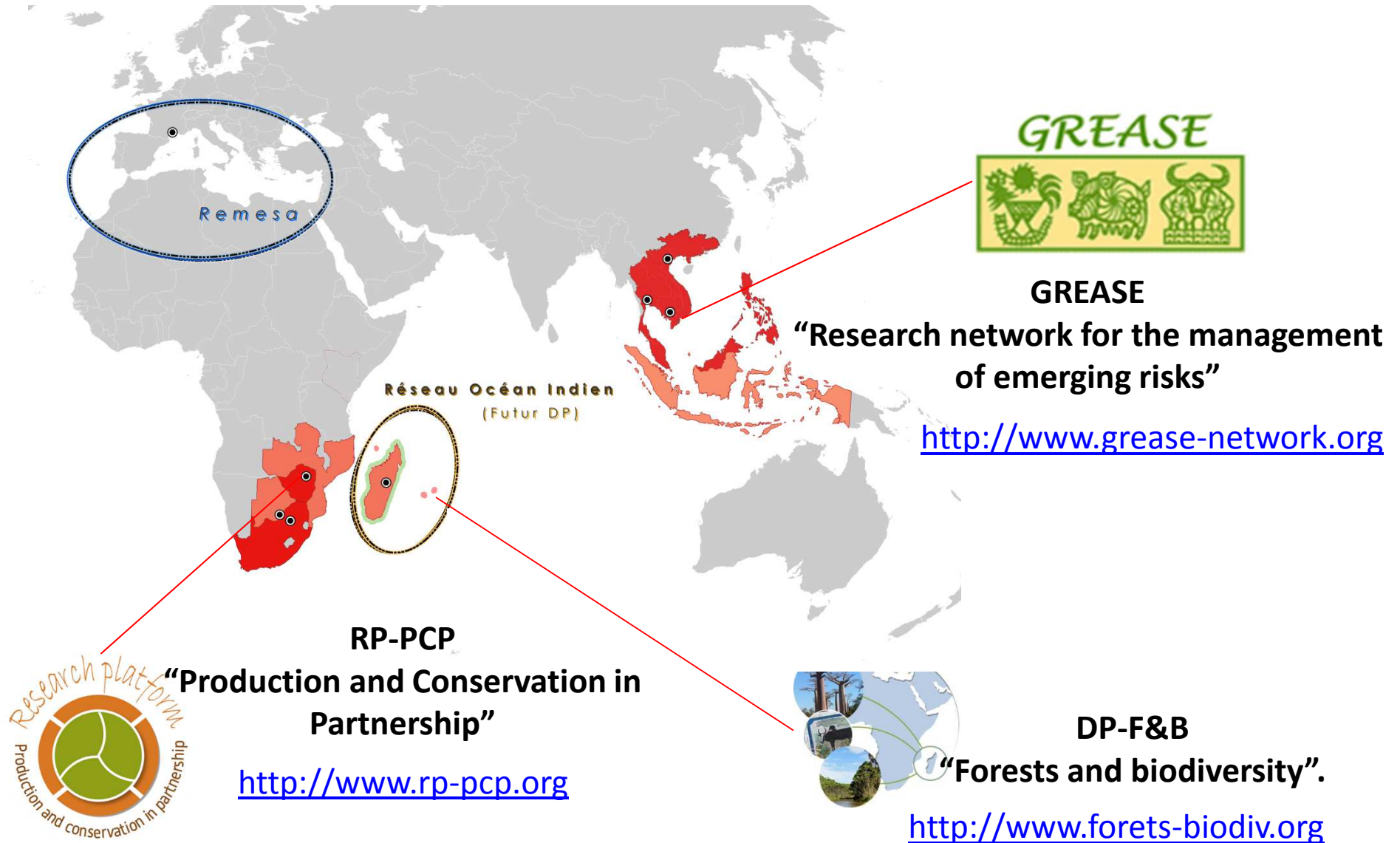


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How to merge together different points of view ?
How to demonstrate the benefits ?

In practice?





Objective

GREASE is a regional network to support Research Activities for a better Management of Emerging Epidemic Risks in Southeast Asia. It responds to the challenge of **emerging transboundary animal infections and zoonotic diseases** by producing a theoretical and operational framework in the framework of the "One Health" approach. Therefore, every disciplines linked to the Management of Emerging Epidemic Risks are involved: **Veterinary medicine, Public Health, Ecology, Economics, Sociology, Geography, Modelling Sciences, Biostatistics**, etc.

GREASE provides scientific and institutional support to facilitate interactions between various stakeholders including:

- **Scientists** from Southeast Asia and worldwide
- **Decision-makers:** National veterinary services and Institutes, International agencies (OIE, FAO, WHO, etc.)
- **Local actors:** Farmers, market chains operators, local authorities, NGOs, communities' representatives, etc.

Contact

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GREASE Network
President



Partnership

"GREASE is research and training platform in partnership implemented by Cirad and its partners in Southeast Asia".

The **core members** of this regional network coordinated by Cirad are: Kasetsart University (KU) in **Thailand**, the National Institute for Veterinary Research (NIVR) in **Vietnam**, the National University of Laos (NUOL), the National Veterinary Research Institute (NAVRI) in **Cambodia**, Central Mindanao University (CMU) in the **Philippines** and **Cirad**, a French agricultural research center.

Associated partners also participate in the network for the implementation of projects or workshops and for trainings organization: IPC, HKU-PRC, MU-A, AVSF, IRD, CNRS, OIE, FAO-RAP, AIT. An extension of this regional network's activities to **China, Hong Kong, Malaysia** and **Indonesia** is under development.

News

Epidemics 4
04/10/2013
Nov. 19-22, 2013 in Amsterdam, The Netherlands
[Read more](#)

Biting Insects as Vectors of Trypanosomes in South East Asia (Workshop / Training on BITVSEA); from field to laboratory
03/10/2013
Nov. 18-22, 2013 at Veterinary Research Institute in Ipoh, Malaysia
[Read more](#)

2nd GRF One Health Summit
2013
03/10/2013
Nov. 17-20, 2013 in Davos, Switzerland
[Read more](#)

5th World Waterfowl Conference (WWC)
03/10/2013
Nov. 6-8, 2013 at the Sheraton Hotel in Hanoi, Vietnam
[Read more](#)

All the news

See also

Cirad in Southeast Asia:

- [Continental Southeast Asia](#)
- [Southeast Asian islands](#)

... Development of a multidisciplinary approach through research/training projects and scientific networking

Objective :
STRENGTHENING SYNERGIES AMONG RESEARCH INSTITUTIONS

Focus on producing a theoretical and operational framework for analysis and integration of disciplines and stakeholders

<http://www.grease-network.org/>



KASETSART UNIVERSITY

*Companion Approach for Cross-Sectoral
collaboration in health risk management
in SEA*

COMACROSS

2014-2018

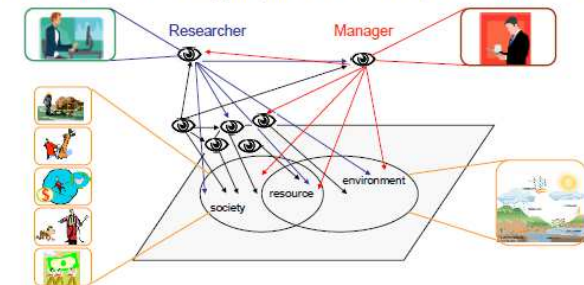


ComAcross specific goals

- › **Improve awareness on OH/ EcoHealth best practices**
 - Frameworks and mechanisms for improved “dialogue” and routine collaboration : companion modeling and participatory mapping
- › **Improve vocational competencies**
 - Eco-epidemiological studies, participatory field work, various training
- › **Raise postgraduate students’ capacities on “Assessment and management of risks at the H/A/E interface**
 - InterRisk Master degree (Kasetsart Un./ ENVT)



Interactions among stakeholders with different weights, interest & representations



Modelling complexity in social-ecosystems through effective dialogue, sharing of viewpoints, knowledge & subjective criteria used by stakeholders, explicitly or implicitly

Planned activities

- **A “case study”-based approach with 4 “model diseases” that will function as case studies for knowledge sharing and cross-sectoral collaboration**
 - **Thai** long term study on [flood driven diseases](#)
 - **Cambodian** long-term study on [Japanese Encephalitis](#)
 - **Lao** long-term study on [zoonotic diseases of livestock](#) with a focus on [parasitic diseases](#)
 - **Regional** long-term study on [Nipah Virus](#).
- **The implementation of the 4 case studies will be coordinated through a participatory approach**
 - To reveal and strengthen synergies between the various stakeholders involved.

South East Asia Encephalitis project

- Multidisciplinary research program aiming to reduce morbidity and mortality associated with infectious encephalitis
- Document and analyse factors related to clusters of encephalitis cases integrating human health, animal health and environment.



OVERVIEW INFORMATION

Project context

In Asia, acute encephalitis is among the most frequent and severe causes of pediatric hospitalization. Moreover encephalitis etiologies remain unknown in more than 60% of patients. Because the epidemiological situation in developing Southeast Asian countries is particularly appropriate to reveal the circulation of emerging infectious agents, the study of the circulation of acute encephalitis syndromes is of great importance, both locally and globally.

[OPEN ACCESS](#) Freely available online

SEAE SOUTH EAST ASIA ENCEPHALITIS PROJECT

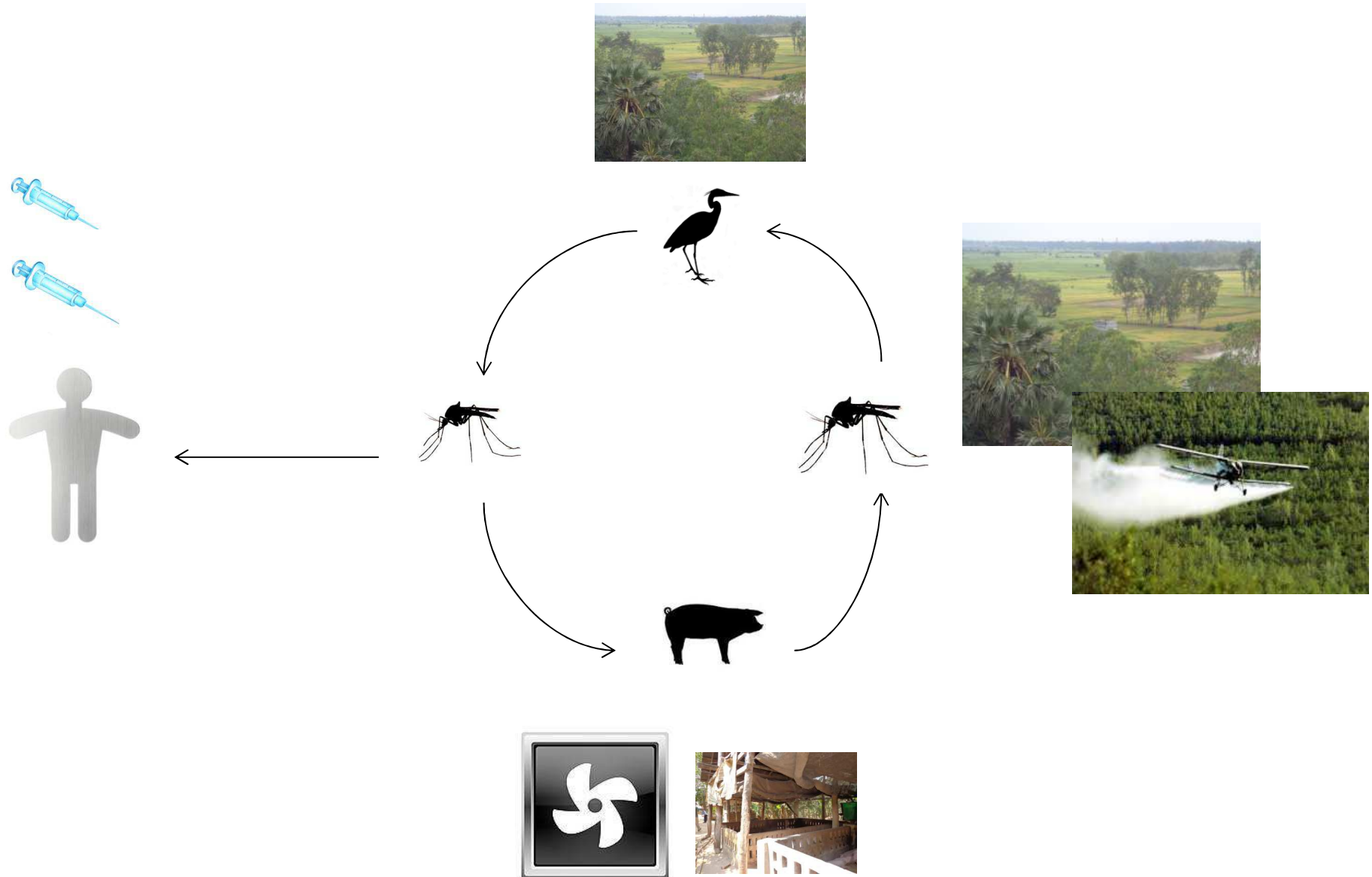
 **PLOS** | NEGLECTED TROPICAL DISEASES

Review

Estimating the Burden of Japanese Encephalitis Virus and Other Encephalitides in Countries of the Mekong Region

Arnaud Tarantola^{1*}, Flavie Goutard^{1,2}, Paul Newton³, Xavier de Lamballerie⁴, Olivier Lortholary⁵, Julien Cappelle^{1,2}, Philippe Buchy¹

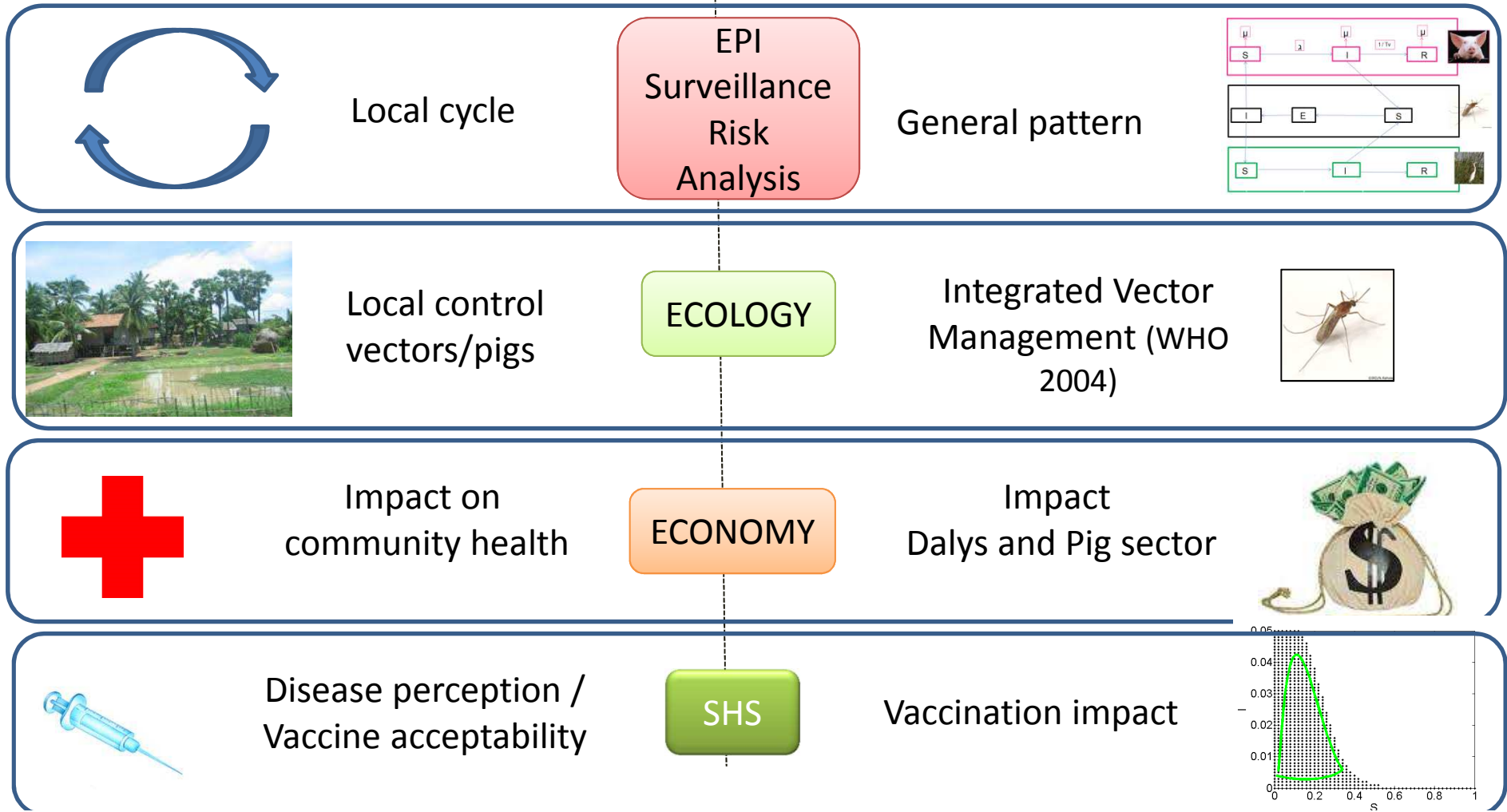
Japanese Encephalitis and existing control measures



JE control : OH and EcoHealth

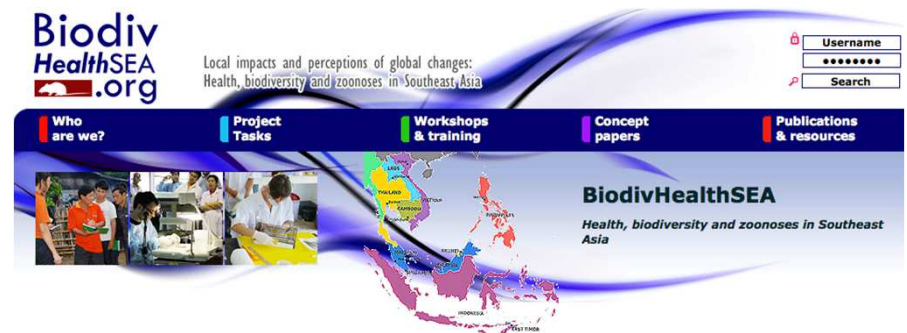
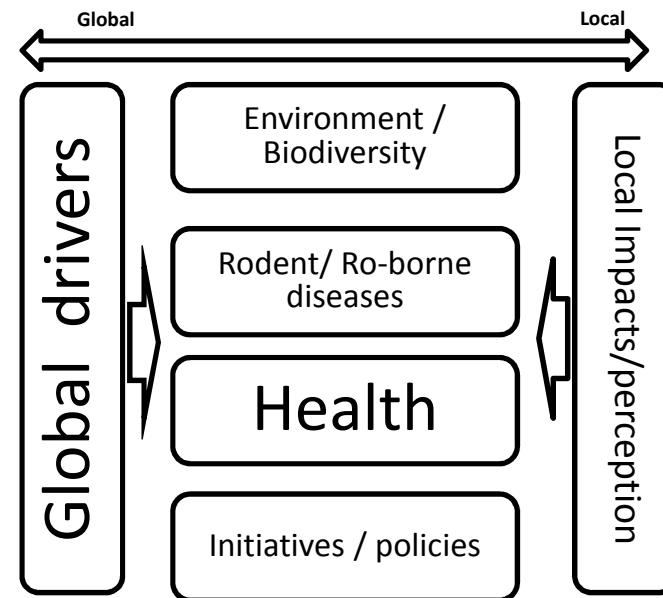
EcoHealth

OH



BiodivHealthSEA

- Niche modelling and epidemiology
 - Does infection in rodents reflect the infection of humans ?
 - Are there “hotspot” of Leptospira incidence in humans?
 - What are the socio-environmental associated factors
 - Slopes, watershed, rain-red rice fields...?



www.biodivhealthsea.org



- **Methodological** approach for evaluation/optimisation of animal disease management systems
- Developing **generic tools** to improve public/animal health and private/public partnership in zoonotic disease surveillance
- **Interdisciplinary** approaches integrating socio-economy, epidemiology and modeling
- <http://revasia.cirad.fr/>



Optimizing early detection of avian influenza H5N1 in backyard and free-range poultry production systems in Thailand

Flavie L. Goutard^{a,b,*}, Mathilde Paul^{a,c}, Saraya Tavornpanich^{d,e}, Ivan Housse^f, Karoon Chanachai^d, Weerapong Thanaporn^d, Katharina D.C. Stärk^b, François Roger^a



A capture–recapture analysis in a challenging environment: Assessing the epidemiological situation of foot-and-mouth disease in Cambodia

Timothée Vergne^{a,b,*}, Vladimir Grosbois^a, Benoît Durand^b, Flavie Goutard^a, Camille Bellet^a, Davun Holl^c, François Roger^a, Barbara Dufour^d

^a Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Département ES, UR22, TA C22/E, Campus international de Baillarguet, 34398 Montpellier Cedex 5, France



Evaluating the efficiency of participatory epidemiology to estimate the incidence and impacts of foot-and-mouth disease among livestock owners in Cambodia

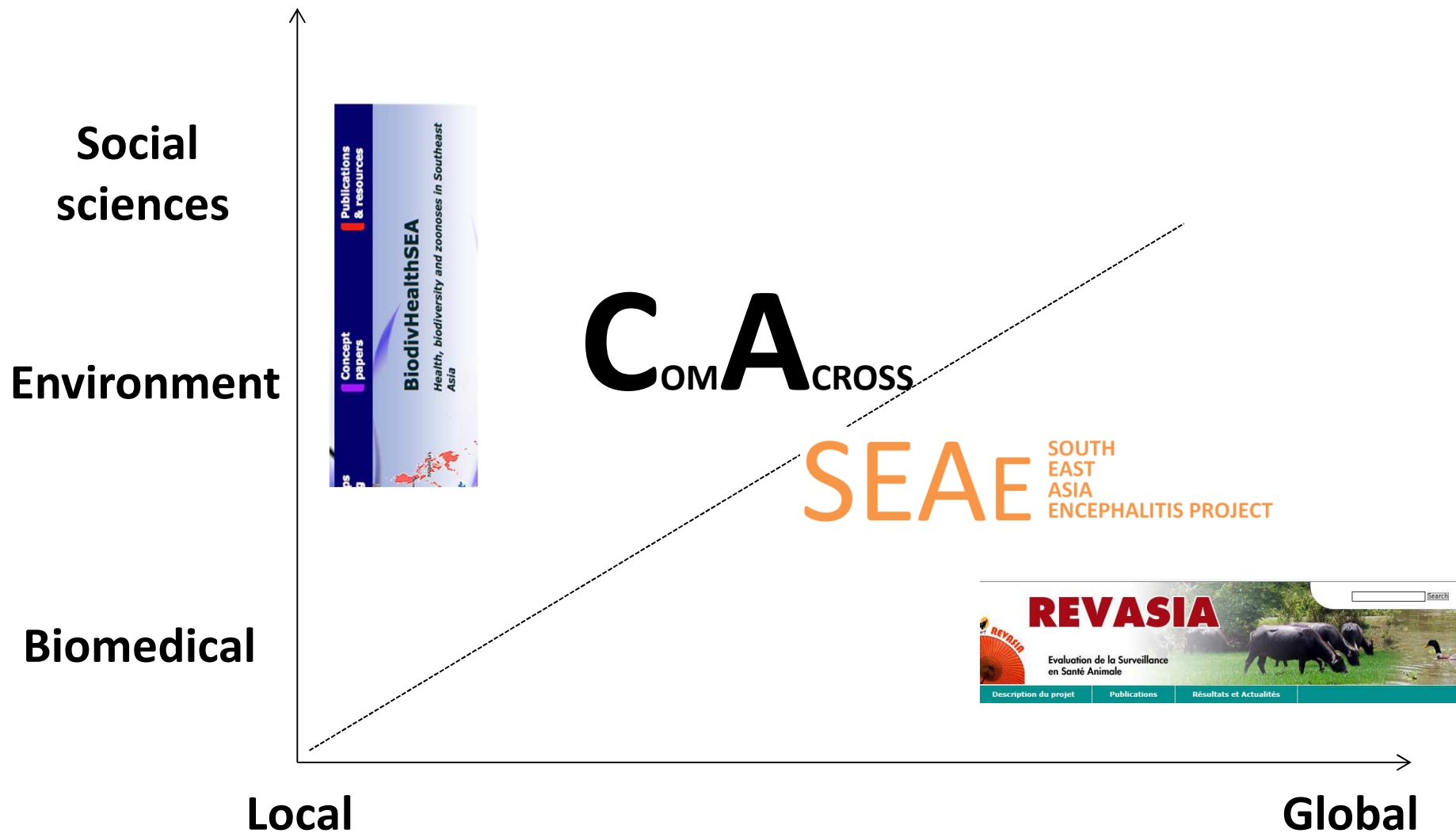
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In the « OH-EcoHealth » world



OneHealth and EcoHealth

Same wine in different bottles?

=> **Unified conceptual and operational framework**

(with guidelines regarding the approaches and methods to implement transdisciplinary in different socio-ecosystems and at different operational levels

=> **The convergence of the two concepts**

would be **mutually beneficial**

would **facilitate communication**

with the general public, policy makers and donors

(improve marketing of the product for potential wine consumers!)

Thank you !

