One Health, Ecohealth and zoonoses research in Southeast Asia

There is an increasing recognition that many public health issues are complex and can be best understood by examining the relationship between the health of people and animals and the ecosystems in which they live. Two approaches—One Health and Ecohealth—that have emerged over the last decade can help us to better understand these intricate and complex relationships, and appear to hold great potential for tackling modern public health issues related to food safety and zoonoses.

Ecohealth on agricultural intensification and health

The field building leadership initiative, supported by the International Development Research Centre (IDRC) from 2011–2016, has been working to understand and address intensive agricultural practices and associated health risks in Southeast Asia and China. Developed jointly by research centres in China, Indonesia, Thailand and Vietnam, this five-year initiative allows scientists and their partners to engage in research, and capacity building and knowledge translation activities to inform practice and policy. In Vietnam, they promoted the correct treatment of biogas waste water to reduce risks to humans, animals and the environment.

Zoonoses, food-borne diseases and One Health

EcoZD project in Southeast Asia (2007–2013)

**EcoZD case studies**
- Rabies (Bali, Indonesia)
- Leptospirosis (Vietnam and Java, Indonesia)
- Brucellosis (Yunnan, China)
- Toxoplasmosis (Yunnan, China and Java, Indonesia)
- Pig zoonoses (Laos)
- Human diarrhoea (Cambodia, Thailand)
- Salmonella in small-scale chicken slaughterhouses (Thailand/Vietnam)

**Ecohealth resource centres**
- Chiang Mai University, Thailand
- Gadjah Mada University, Indonesia
- CENPHER, Vietnam

The IDRC-funded *Ecosystem approaches to the better management of zoonotic emerging infectious diseases in Southeast Asia* (EcoZD) project was coordinated by ILRI. It covered six countries: Cambodia, China, Indonesia, Laos, Thailand and Vietnam.


PigRISK seeks to improve food safety in smallholder pig systems (Hung Yen and Nghe An). Funded by ACIAR, its multi-disciplinary teams include public health specialists, veterinarians and agricultural economists.

CGIAR research collaboration (2014–2015)

This assessment of parasitic zoonoses in indigenous pig systems of the Central Highlands, Vietnam, was funded by CGIAR research programs on Livestock and Fish and Agriculture for Nutrition and Health.

Pestforecast project (2015–2017)

“Surveillance and early-warning systems for climate-sensitive diseases in Vietnam” funded by the CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). This project offers a portfolio of climate-based information systems targeting critical diseases of zoonotic importance (Japanese encephalitis, leptospirosis and aflatoxicosis). It proposes action research to adapt these systems for Vietnam.

Sustainable intensification of dairy production in Indonesia (2016)

This project develops customized new knowledge and solutions for smallholder dairy farmers in West Java to: reduce greenhouse gas emissions from dairy production; sustainably increase farm productivity and resource-use efficiency; and, consequently, improve farmer incomes and livelihoods in the long term. Funded by CCAFS, the work is undertaken in collaboration with Wageningen University.

Livestock CGIAR research program (2017–2022)

Funded by CGIAR, this project aims to develop and deploy methods and tools to identify the extent and impact of animal health constraints on animal productivity and livelihoods. These approaches will first be used in the focus systems and value chains of the program’s priority countries and then in other locations.