

Ecohealth research to regionally address agriculture intensification impacts on health and the environment in Southeast Asia and China



September 2015

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Ecohealth Field Building Leadership Initiative (FBLI) is a regionally operational research program in Southeast Asia and China that focuses on solving human health problems associated with agricultural intensification. FBLI gathers researchers, policy makers, community members and other stakeholders from 4 focused countries (China, Indonesia, Thailand and Vietnam). Operational research focuses on aspects of agriculture intensification on health and the environment in 4 study sites. Integrated approaches to the research component including survey, participatory and cross-cutting methods. Research outputs with an participatory consultations lead to the identification of interventions that improve health and environment.

Approach and activities

Research approach

- Using ecohealth approaches to manage ecosystems and health in the context of agricultural intensification
- Generate knowledge: links and interactions among agricultural practices, ecosystems, and health.
- Develop practical and innovative solutions to address health and environment problems identified.
- Engage with local policy makers during the early stage of the research process, and to inform them about research findings.
- Multi-institutional, inter-disciplinary team

Key results from the countries

- **China:** in six villages of three townships in a County of Yunnan Province, issues identified were lack of farmer knowledge of pesticides, pesticide abuse, and ineffective policy to reduce pesticide abuse. Pesticide contamination was recorded from 6.1% to 12.7% of vegetables depending on sampling location in the field or market.
- **Indonesia:** in Pangalengan, the Ecohealth approach was used to promote the production of medicinal worm and casting biofertilizer from cow manure as an environmentally-friendly fertilizer alternative.
- **Thailand:** in Chachoengsao Province, key findings include evidences for higher risk of vector-borne diseases (dengue and chikungunya) in rubber plantation areas as well as higher microbial and heavy metal contamination of water and soil.
- **Vietnam:** in Hanam, studies on health and environmental impacts of manure management options, in particular the biogas system and turning waste to value. The health risks from biogas effluent reuse include *E. coli* infection (19%-22% of population exposed) and *G. lamblia* infection (45%-55%).



Red dots indicate study sites

	CHINA	INDONESIA	THAILAND	VIETNAM
Site	Yuanmou Country, Yunnan Province	Pangalengan, Bangdung District, West Java Province	Chachoengsao Province	Kim Bang and Duy Tien District, Hanam Province
Research topic	Reducing pesticide use and its health and environment impacts	Connecting Issues and Finding Interventions for Small-Scale Farming in Dairy Production	Rubber plantation expansion and increased risk of vector-borne diseases	Better Management of Livestock and Human Waste

Interventions

CHINA



Health education for a right use of pesticides using "street theater" and calendar, and posters on knowledge of pesticide.

INDONESIA



Engaging community in agricultural bio-production of Medicinal Worm & Casting biofertilizer from cow manure by forming a community cooperative

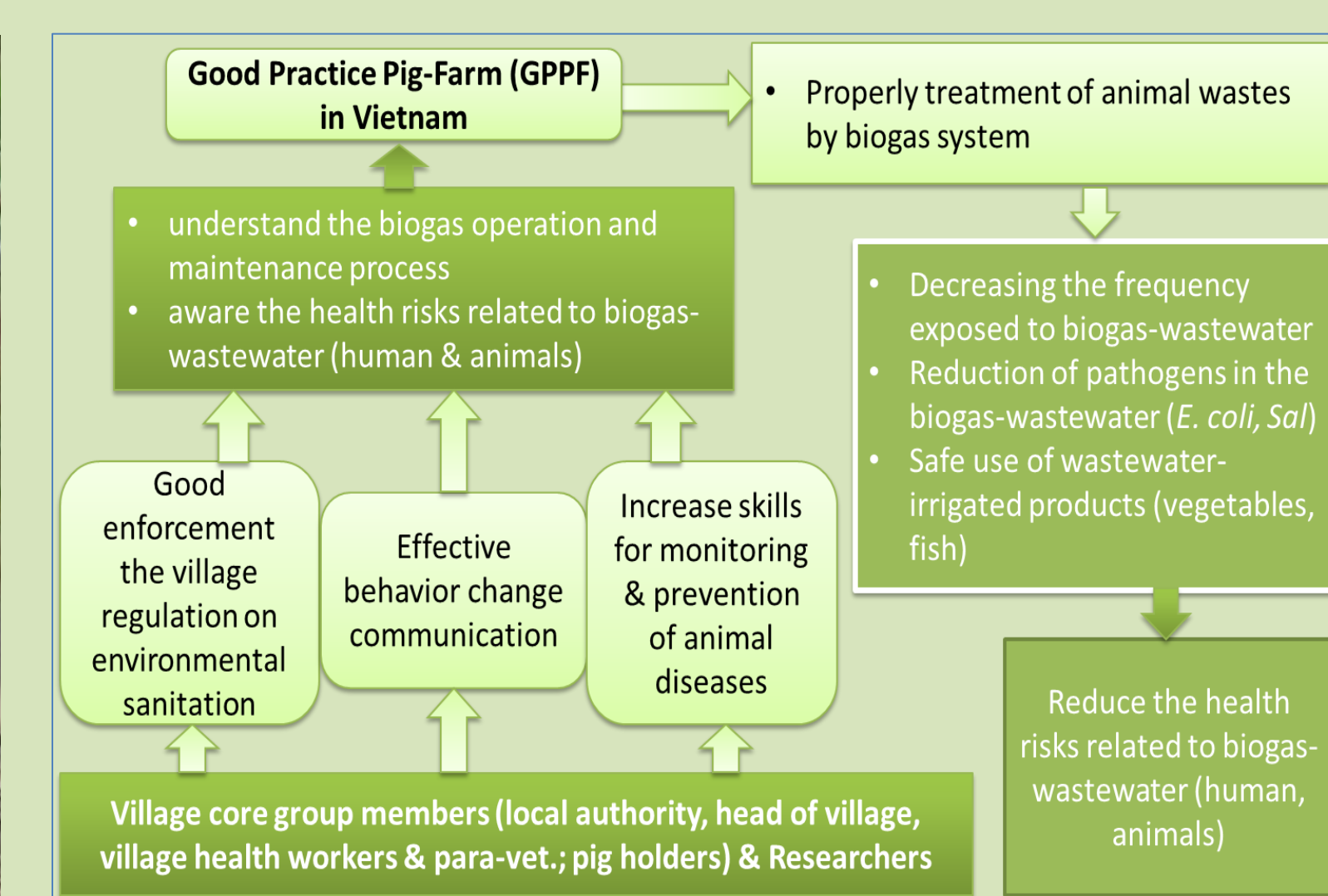
THAILAND



Reduction of risk to vector-borne diseases and chemical residues in rubber workers

- Short-term: Health education and use of impregnated jackets and impregnated bed nets.
- Long-term: Health education and application of sterile insect technique (SIT).

VIETNAM



Good management of biogas to reduce health and environmental risk by combined intervention of health education

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