



Uncovering outcomes and challenges of using an Ecohealth approach for better human and animal waste management in Hanam Province, Vietnam

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Background

The Ecohealth Field Building Leadership Initiative (FBLI) (2011-16), supported by the International Development Research Centre (IDRC), aims to understand and address intensive agricultural practices and associated health risks in Southeast Asia and China through research, capacity building, and knowledge translation (Lam et al. 2016).

In Vietnam, FBLI researchers and their partners are conducting a project titled "**Using an Ecohealth approach for better human and animal waste management in Hanam Province, Vietnam.**" Hanam was chosen as the study site for several reasons: strong agricultural community; and existing relationships between the research team and community members through a previous project (NCCR North-South). Human and animal waste management was identified as a priority agricultural intensification issue, and the use of wastewater and excreta in agriculture is common practice in

Hanam. However, this practice can present potential public health risks to farmers and consumers if not properly managed.

The objectives of this project are to conduct research on current status of agriculture in Ha Nam, determine health risks from human and animal waste management, and implement interventions for better waste management. A pilot intervention was conducted in Hoang Tay commune in October 2014. The aim of the intervention was to, among others, improve knowledge and practice surrounding safe and effective biogas waste management.

A six-step model was developed as the result of discussion between local farmers, research team members and a biogas expert. The model aims to promote best practice among biogas users in Hoang Tay commune of Hanam. A core group of 12 motivated farmers was formed and trained on hygienic livestock practices, and biogas waste management knowledge was

disseminated to other farmers. A number of posters, calendars, and booklets were designed as tools for community-based communication sanitation in the local area. Change was also promoted at the communal level, through the commune's traditional regulation document "Huong Uoc".

A second intervention is currently being conducted in Chuyen Ngoai commune of Duy Tien district, Hanam province (since the beginning of 2016), following similar intervention steps.

About the evaluation

The purposes of the evaluation are to:

- 1) Determine what outcomes the intervention contributed to;
- 2) Determine challenges of the intervention; and
- 3) Make recommendations to improve the intervention for the next pilot in Chuyen Ngoai.

We define outcomes as changes in behaviour, relationship, action, and activity of community leaders or community members (Wilson-Grau and Brit 2012) as a result of FBLI activities. We also sought whether or not Ecohealth principles (Charron 2012) were considered in this project through the use of Ecohealth indicators. Both questionnaires and in-depth interviews were used to collect data for the evaluation. The questionnaire was administered through interviews with 12 core group members and three community leaders. In-depth interviews were also conducted with six core group members and four community leaders.



*A discussion with the local community leaders
(Photo credit: CENPHER/HSPH)*

Findings and results

Added value from Ecohealth research compared to traditional research

Community leaders recognized differences between Ecohealth research and traditional research, noting value added from:

- The involvement of different local stakeholders such as farmers, authorities, and sectors, from the beginning of the research until the end
- The direct and close work with farmers throughout the intervention
- Regular updates on the progress of the research/intervention

One community leader expressed that this approach can address the sanitation problem by mobilizing participation of all local stakeholders in designing and delivering solutions.

"The sanitation problem, if assigned to an individual, can never be solved... [Research team members] worked with the locals to find the research issue, make plans to solve the issue and implement these plans".

Prioritization of sanitation as an important issue in the community

One of the leaders have used the results of the intervention in two important decisions of the Commune People's Committee (CPC). Firstly, an official instruction from the CPC to implement the modified Huong Uoc - an informal regulation, which only received little attention from the leaders of the committee before, has been issued. The regulation needed to be approved by different levels of authority, especially the Communist Party at the communal level; repeated discussions during the implementation of the intervention drew the attention of local authority on the sanitation issue and prompted the decision of the CPC. Secondly, the CPC has decided to prioritize sanitation in their rural development plan 2020. The CPC's decision was that the sanitation criteria should be reached by 2016.

"Thanks to the [FBLI] intervention, the villagers, especially those using biogas, have understood the importance of sanitation ... it is the reason why we are pretty sure that we will meet the sanitation criteria for rural development soon in this year [2016]. Soon, we will become the new developed agricultural area" (Interview with the vice head of the CPC, 16 June 2016, translated from Vietnamese).

Core group farmers were satisfied with interventions

Almost all participants (core group members) were satisfied with the knowledge gained from the research, and the activities of the intervention. Around 16% felt neutral regarding the handbook and biogas information calendar. The majority of participants also agreed that

Ecohealth principles were applied in this project. However, 9% disagreed that human health was considered in this project, and 16% disagreed that economic factors were considered. Almost 20% felt neutral that the project benefitted both genders, that their opinions were considered, and that they were important members of the research team.

Difficulties in implementing the 6-step model

From the six key informant interviews with core group farmers, the majority of farmers do not implement the 6-step model anymore (4/6). A common reason for not implementing the model is the "extreme hot weather", which called for more water to be used to clean the pig cages and wash the pigs. One farmer expressed that pair monitoring of farmer activities is not sustainable as it is timing and farmers do not feel comfortable checking on each other. There was no concrete evidence showing changes in behaviour, relationship or activity among this group.

For recommendations, farmers expressed that the model should not be applied to big scale farming (not feasible). Further, some steps need to be adjusted. For example, checking the final tank cover should be done once every week, not every time as currently suggested. There should also be less pressure in the pair monitoring. Farmers also mentioned that they would like to hear about the status of the biogas samples. The community leaders suggested that there should be more training among the farmers, and the trainings should encourage farmers to contribute more.



A farmer in Hoang Tay commune with the poster on 6-step of safe practice of biogas system

Conclusions

Community leaders saw value in the FB LI project and have used the FB LI findings to inform policy (Huong Uoc), and strategic directions (rural development plan 2020). Core group members were satisfied with the research and intervention activities, and most members perceived that Ecohealth principles were applied in this project. Despite farmer's reported satisfaction and positive attitudes towards the project, key informant interviews revealed several key challenges in implementing the intervention including hot weather conditions and non-feasibility of some steps (e.g. heavy lid).

Recommendations

- 1) Continue to build trust with farmers and encourage participation and feedback during the research/intervention process to promote uptake of suggested intervention activities.
- 2) Share results of biogas samples with farmers.

- 3) Adapt interventions according to season and type of pig farm.
- 4) Consider incentives for pair-to-pair training and monitoring activities.
- 5) Consider scaling up for higher participant reach.
- 6) Encourage sharing field observations.

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