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How people value surveillance of zoonotic animal diseases? The example of HPAI in Vietnam

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Introduction

Private actors of animal productions perceive diverse advantages and disadvantages associated with surveillance of zoonosis. A method comprising a survey based on participatory epidemiology tools and network analysis was developped and applied to passive surveillance of Highly Pathogenic Avian Influenza (HPAI) subtype H5N1 in Vietnam .

...There are other options...

Management of diseases matching HPAI suspicions definition was explored in focus groups of poultry farmers . Likelihoods of options were scored using proportional piling.

Production scale	Production system	Study Area*	Relative likelihood of decision**						
			PF	RS	FS	VS	FC	VA	SR
Large (>1000 birds / flock)	Broiler chicken	HD	17	28	18	37	0	0	0
	Broiler chicken	DN	0	0	0	100	0	0	0
	Broiler duck		9	0	0	24	67	0	0
	Layer quail		0	0	0	30	6	0	64
Medium (100-1000 birds / flock)	Broiler chicken (n=2)	HD	39	0	36	18	7	0	0
			38	19	27	16	0	0	0
Small (<100 birds / flock)	Backyard chicken (n=4)	HD	17	25	49	9	0	0	0
			27	0	56	17	0	0	0
			8	62	25	5	0	0	0
			6	7	53	26	0	8	0
	Backyard chicken (n=2)	DN	0	0	0	80	0	0	20
			31	0	0	69	0	0	0

*The study areas: HD = Hải Dương, DN = Đồng Nai

**Decision: PF: warning of other poultry farmers, RS: Rapid sale of animals, FS: ask support from the feed seller, VS: ask support from the veterinary shop, FC: ask support from the feed company, VA: report to veterinary authorities, SR: self-reliance

Scores are shown above. Poultry farmers have different options in response to disease occurence including reliance on support from upstream sector (feed and medicine shops, agro-industry) and rapid sale of animals.

...Reporting may cost...

Non-monetary incentives and disincentives for reporting HPAI suspicion cases were explored in individual semi-structured interviews.

Uncertainties in outcomes of reporting and transaction costs were anticipated by farmers.

Farmers and other actors of poultry production associated disease suspicion reporting with likely impacts on market prices affecting actors all along the value chain.

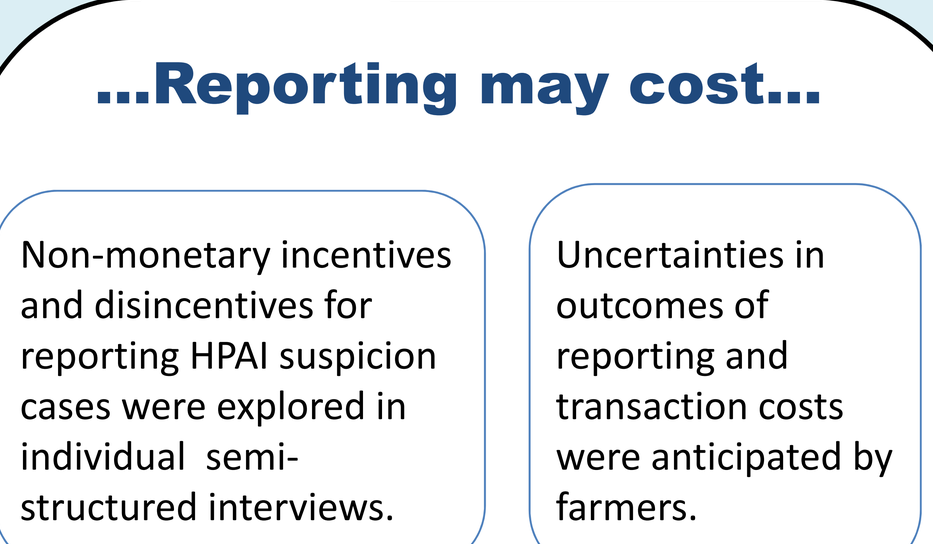

Figure 1. Market impact of HPAI suspicion information release

...Information can be disseminated through private networks

Graph theory was used to describe and analyse information flows on disease suspicions. Snowball sampling was used to target all types of actors involved in the network and all participants were asked to score their transmissions of information

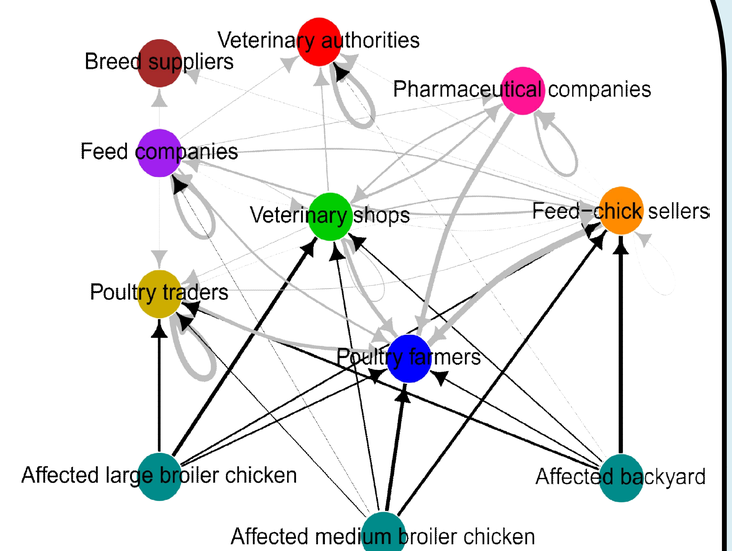

Figure 2. Identified information-sharing network of HPAI suspicion information

Networks of information on disease suspicions involve a large diversity of private actors. Poultry farmers get information from private sources.

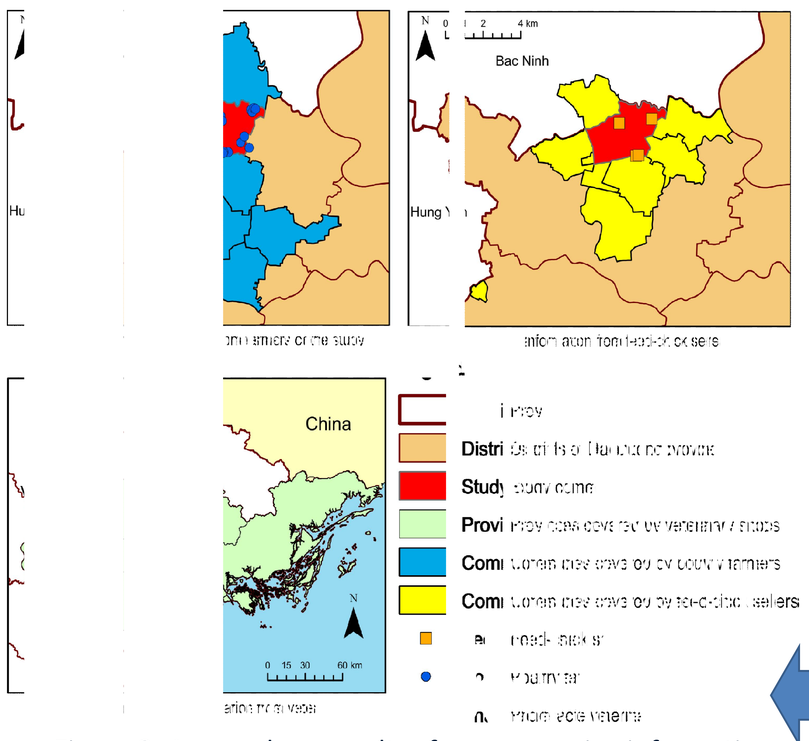

Figure 3. Areas where poultry farmers receive information from private actors of the northern Vietnam study area

Some private actors disseminate information on large distances

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