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Family farming

Efficiency and acceptance of livestock disease control by family livestock farmers—avian influenza in Vietnam and Egypt

Phan Dang Thang © CIRAD



▲ Vaccination of a reared duck flock in Long An province, Vietnam.

Highly pathogenic H5N1 avian influenza is endemic in several countries (China, Bangladesh, Indonesia, Egypt, Vietnam), with significant socioeconomic impacts. Vietnamese and Egyptian governments set up a mandatory mass vaccination programme against this disease implemented through biannual vaccination campaigns for family-reared village poultry (2005-2010 in Vietnam, 2007-2009 in Egypt). Vaccination of commercial poultry (partly from family farms) is handled by the private sector, with varied efficiency depending on the country and type of production.

Studies carried out by UPR AGIRs highlighted the importance of social, cultural and economic factors in the acceptance of community-controlled measures. In Egypt,

family poultry farms (village or commercial) did not vaccinate their flocks, partly because of their limited confidence in government practices, the lack of information, etc. In Vietnam, such vaccinations seemed to be more acceptable, but with marked geographical variations due to the decentralized administration, problems of accessibility and local management of the risk by smallholders, thus reducing the economic benefit they could gain from the vaccinations.

Economic evaluation of health programmes is a major argument in designing control strategies on a national scale. However, the economic priorities of family poultry farmers differ from those at the national level. Moreover, the effectiveness of these programmes depends on the acceptance by farmers to implement the measures and report disease cases. Current evaluation methods do not take these aspects into account and are based on national surveillance data of often questionable quality and reliability. Control programme evaluation methods should involve participatory and interdisciplinary approaches in order to fully understand these constraints, while ensuring that family farmers participate in the decisionmaking process. In Egypt, mass household poultry vaccinations were stopped after these efficiency studies were conducted on family poultry farms.

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Health risks associated with livestock and wild animals in developing countries

The internal research unit *Animal and Integrated Risk Management* (UPR AGIRs, CIRAD) aims to understand, predict and manage health risks associated with livestock and wild animals in developing countries in a global change setting (habitat simplification, biodiversity loss, urbanization, deforestation, trade globalization, global warming). A broad range of methods—descriptive epidemiology, ecology, geomatics, biostatistics, health geography, anthropology, quantitative epidemiology, modelling of complex systems—are thus implemented under two complementary approaches jointly applied in research programmes

and projects in various geographical areas, including Southeast Asia, Southern Africa, Madagascar and the Mediterranean region:

- ① The first approach aims to identify factors determining the behaviours and spatiotemporal evolution of animal diseases—zoonotic or not—that are important in terms of health and economic impacts. These diseases are emerging or endemic, vector-borne or directly transmitted (avian influenza, foot and mouth disease, tuberculosis, African swine fever, Rift Valley fever, etc.). Such disorders—by causing mortality, morbidity or decreased milk or meat production—weigh heavily on the economy and subsistence of small family farms.
- ② The second approach focuses on the functioning of socioecosystems jointly inhabited by hosts (wild

animals and livestock, humans, i.e. farmers and/or consumers) and pathogens. The aims are to assess the animal and public health risks and to propose methods for managing these risks (monitoring and control) that are tailored and optimised for the considered socioecosystems. Efficient control of animal diseases requires rapid responses when an epizootic disease emerges. Addressing this challenge is essential in developing countries where resources (specific expertise, funding, information technology tools, etc.) are limited.

The unit works closely with many partners—research and development institutions—in France and developing countries (Africa and Asia) and is involved in several international networks. ●●●