

Integrating socio-eco-epidemiological approaches into health research

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Sixty percent of emerging infectious diseases events are zoonotic and among those, 72% are caused by pathogens of wildlife origin. The distribution and intensity of most animal and zoonotic diseases have changed in recent years in response to environmental disruption, anthropization and globalization: with increased trade and climate change, health risks have become global, and concern every single country in the world. In an interconnected world, human, animal and environmental healths are inextricably linked. A strong integration of ecology, epidemiology, geography and social science into a cross-disciplinary research framework is crucial for preventing and controlling animal and zoonotic diseases.

Research conducted by the AGIRs research unit of CIRAD and its partners is developed within such an integrative eco-epidemiological framework. CIRAD is an FAO and OIE collaborating center for the diagnosis, epidemiology and control of animal diseases and AGIRs' research focuses on the following areas: (i) understanding the ecological and manmade processes that drive the transmission of animal and zoonotic diseases; (ii) optimizing surveillance systems and control strategies; and (iii) assessing the perception of disease risk. The research approach used combines tools and methods developed in ecology (satellite tracking, capture-recapture), epidemiology (risk analysis, modeling), and socio-economical sciences (social network analysis, cost-benefit analysis).

In Southeast Asia, AGIRs' activities are implemented within the framework of the animal health and veterinary public health network GREASE "Management of emerging risks in Southeast Asia". This regional network associates academic and research organizations in five Southeast Asian countries (Philippines, Thailand, Vietnam, Laos and Cambodia). It aims to improve, through synergy and sharing of skills on a regional level in Southeast Asia, the management of risks associated with transboundary and emerging diseases.