Animal Health Research Program Strategy

Global context/trends

There is an increasing need to address specific disease problems and risks within a biosecurity and food-security framework. The range of disciplines dealing with issues in animal health is increasing in both Australia and our partner countries and ranges from animal production to social sciences.

Outbreaks of avian influenza since 2006 have highlighted the link between biosecurity and animal health, particularly in Asia. The fact that about three-quarters of emerging human diseases are of animal origin is leading to stronger links between institutions responsible for animal and human health. The recognition that many of these emerging diseases originate in wildlife is also leading to increased collaboration between animal health and disciplines such as ecology and other environmental sciences.

International 'fit'

National priorities in animal health operate in a context of competing policies of international agencies, regional priorities, and bilateral agreements with neighbouring countries and with donors. This means that it is increasingly difficult to tease apart the expressed demand of partner countries such as Cambodia, Indonesia and Laos and from the development needs of the producers and consumers the Australian Centre for International Agricultural Research (ACIAR) aims to benefit.

Traditional approaches to biosecurity focused on known risks and reducing risks at national boundaries and through 'stamping-out' disease outbreaks. The emerging context is the need to build capacity and systems to deal with unknown risks (new diseases, new strains), and managing risk along the supply chain with emphasis on 'pre-border' systems. The 'One Health' concept promotes shared training, shared research, and joint action by veterinary, medical and environmental agencies to prevent and control disease. New public–private partnership approaches are developing in commercialisation of products that are technically appropriate and affordable (e.g. the Global Alliance for Livestock Veterinary Medicines and Diagnostics) and in disease prevention, preparedness and response (e.g. Animal Health Australia).

Research themes

ACIAR investments in animal health and production will largely focus on helping smallholder farmers move from keeping livestock solely as an asset to a managing them as production system for income generation. This transition involves reducing the risks in moving from a household-based to a market economy. Development of health programs for country–species–disease combinations and other livestock husbandry technologies will be considered where there are clear institutional pathways for adoption of the results of research by smallholders and where Australia has relevant experience and expertise.

Research themes	Priority research areas
Transboundary diseases not present in Australia, particularly avian influenza, classical swine fever, and foot-and-mouth disease:	Priorities are disease-surveillance systems; timely and accurate diagnosis; effective and timely control programs; and adequate institutional, regulatory and policy support to implement control activity.
Zoonotic diseases that affect labour productivity and human health in smallholder systems; and that affect the marketability of the livestock	Significant diseases include brucellosis (cattle, sheep, goats), leptospirosis (cattle, pigs), parasitic cestodes (pigs, goats, cattle), rabies (cattle, dogs) and trichinellosis (pigs), as well as emerging

commodity concerned:	diseases such as Nipah virus (pigs). Research will involve collaboration with human-health professionals but concentrate on limiting the transmission pathway from animals to humans.
Diseases affecting production and market access through high mortality, reduced growth rates, low levels of fertility, reduced product quality, and reduced marketability of animals and animal products:	Diseases such as haemorrhagic septicaemia (cattle and pigs) and fascioliasis(cattle, sheep, goats) cause reduced production. Approaches for the protection of flocks or herds against such diseases will be applied to village systems, where social and institutional arrangements for sustained use of disease management are in place.

Countries

Country	% of program budget: active projects
Indonesia	48
Lao People's Democratic Republic (PDR)	28
Cambodia	14
Philippines	6
Papua New Guinea	4

Delivery on corporate goals

ACIAR goal, to improve:	Contributions of projects in the Animal Health program (examples)
Food and nutrition security.	• Improvement and sustainability of sweet potato–pig production systems to support livelihoods in highland Papua and West Papua, Indonesia.
Productivity and resilience of crop, livestock, forestry and fisheries systems	• Increased productivity and reduced risk in pig production and markets in Laos. • Developing improved farming and marketing systems in rainfed regions of southern Laos.
Smallholder and community livelihoods.	• Best-practice health and husbandry of cattle, Cambodia.
Animal and plant biosecurity.	• Understanding livestock movement and the risk of spread of transboundary animal diseases in the Mekong. • Cost-effective biosecurity for non-industrial commercial poultry operations in Indonesia. • Animal health surveillance systems for Papua New Guinea.
Individual and institutional R&D capacity.	• Individual capacity building is a component of all projects. The program has 25 postgraduate students associated with projects.

Future focus

Indonesia will remain the dominant country and the Mekong the dominant region in the Animal Health program for the planning period up to 2016. Cambodia, Lao PDR and increasingly Burma will be the focal countries in the Mekong region. The Philippines and Papua New Guinea currently have single projects, and new projects in Africa (Botswana, Tanzania and Zambia) are in the pipeline.

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