GLOBAL BURDEN OF ANIMAL DISEASES
- SUMMARY PHASE II PROPOSAL (2020-2025)

Prepared by
Jonathan Rushton and Ben Huntington
(j.rushton@liverpool.ac.uk; b.huntington@liverpool.ac.uk)

GBADs theme leads
Camille Bellet, Theresa Bernardo, Mieghan Bruce, Mario Herrero, Delia Grace, Arie Havelaar,
Vivek Kapur, Tom Marsh, Dustin Pendell, Alex Shaw, Paul Torgerson, Kevin Watkins
and
Paul Wood, Shannon Mesenhowski, Matthew Stone, Emily Tagliaro, David Pigott, Tim Leyland,
Julio Pinto, Barbara Wieland, Jaime Romero, Roger Morris, Marisa Peyre and GBADs collaborators
SUMMARY

Current systems of animal health data and analysis provide no systematic information on production losses, expenditure or wider economic impacts of animal disease and health problems. Yet the public, private and NGO sectors invest millions of dollars each year in animal health research, education and disease mitigation actions. These investments are made either with: (1) cost benefit analyses based on assumptions, (2) rules of thumb (heuristics) of whether a problem needs to be addressed; or reactions due to crises. The system works yet fails to optimize animal health systems and limits the ability of this system to minimize direct and indirect impacts on human welfare. Given that livestock are between two thirds and three quarters of terrestrial animal biomass globally and dominate agricultural land use and water the lack of a systematic animal disease burden information system is a major global problem. Morally, ethically and economically it is not justifiable to continue with an ad hoc system for animal disease investments.

The current proposal presents the core building blocks required to introduce an information system, which has been termed the Global Burden of Animal Diseases (GBADs) programme. It will run parallel to the human Global Burden of Diseases (GBD), yet will differ in its activities and content as it addresses an economic sector with externalities to public health and the environment rather than a focus on human health alone. GBADs programme will also be multi-species in its focus and cover the associated disease and health problems of these species. The GBADs programme will build on existing data collection systems such as OIE-WAHIS and FAOSTAT and will combine these with other data systems linked to the prices and the economy and to monitoring the privately held and managed animals in livestock production systems. The complexity of the programme has required it to be broken into themes which are linked and highlighted below.

The GBADs will assess the location and importance of the livestock Populations and Production Systems collecting and collating information on the input and output relationships of livestock production. This information will be the basis for the estimation of the health loss envelope (Production Loss and Expenditure) due to the presence of disease, health and nutritional problems, which will then be attributed to the causes of this envelope based on careful Animal Health Ontology. The health loss envelope will include information on production loss and expenditure at farm-level and will be used as a parameter for the wider societal impacts of disease through further modeling work (Wider Economy and Trade). Additional information on the direct and indirect impacts on Human Health will also be added. The data and information generated will be held in a secure system of Informatics, which will also allow for modeling of Disease Prioritization and information formats for the effective communication of the results from the GBADs programme. Each theme will be supported by Private Sector Engagement in terms of their own collection of animal production and health data and their need for information to inform animal health decision making. Alongside each theme will be a process of institutionalizing the GBADs methods through an education programme (Education and Communication) that will provide a systematic approach to assessing the impact of animal disease and health problems in livestock. These education programmes will be supported by the development of a code of practice for using biological, disease and economic data for assessing animal disease impacts and a guide on livestock population estimations and their classification by species and production system (Institutional Environment and Decision Making). Both the code of practice and the guide will be presented to OIE and FAO respectively as means of best practice for animal disease impact assessments. The adoption and adaption of the approaches will be through working with international organisations – OIE, FAO, The World Bank and associated development banks, IICA – national governments, NGOs and the private companies managing livestock and critical inputs and outputs from livestock production. The GBADs programme will focus initially on making global estimates of animal disease burdens which will be strengthened over time with in-depth country, disease and sector level studies

The GBADs programme will provide a systematic approach to estimate animal disease burdens and add value to animal disease decision making. Data and the information generated will be accessible to public, private and NGO investors in the animal health system, and it will provide education programmes to allow users the ability to make judgments on their investments into terms of optimizing the economic efficiency of the livestock sector and minimizing its impacts on the environment and public health. GBADs will measure to improve societal outcomes from animals.