Economic Benefits/Drivers of a “One Health” Approach:
Why should anyone invest?

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Overview

- “Facilitating environments”\(^1\) (drivers) of health problems
- Logic of One Health approach based on:
  - Disease criteria
  - Resource use
- Summary and questions

\(^1\) Liz Mumford, WHO
What are the facilitating environments of health problems?
Facilitating environments

• The environments generating health problems are DYNAMIC
• The human population continues to grow
• Movement patterns are constantly changing
• Our livestock systems and associated value chains are evolving in relation to:
  • growing demands for food
  • resource costs in producing, transporting and processing food
• Our responses to existing and emerging challenges are changing
World Population 1750 to 1999

In general the livestock sector responses to change have been:

• **Specialisation** and **intensification** of livestock systems
• **Increased output** per animal and per unit of **labour**
• **Massive expansion** of livestock populations particularly monogastrics
• **Concentration** and **clustering** of livestock populations
• **Increasing sophistication** and **globalisation** of livestock product **value chains**
Impact of these changes on health challenges

- **People** are in **increased contact** with **animals** (domestic and wild) as they populate new environments.
- **People** are placing **domestic livestock** in **greater contact** with **wild animals**.
- **Food chains** that are developing are generating **greater levels of moral hazard** (asymmetry of information).
There are only 339,000 people who work on agricultural holdings in the UK (0.6% of the population) yet they can affect the wellbeing of 60 million people.

Health contributions to the food chain
- Meat inspection,
- Risk analysis HACCP systems
- Clinical treatments
- Epidemiology & Disease Control
- Diagnostics
- Immunology
- Vaccines
- Genetic Resistance

RVC
Royal Veterinary College
Facilitating environments

- Facilitating environments are:
  - **modifying** at different speeds
  - **monitored** with different intensities
  - **risk managed** in different ways
- They appear to be **unequal** in terms of **risks** giving the impression resources for monitoring and management can be targeted
- Yet our predictions of the emergence and re-emergence of disease problems have not been strong – BSE, H5N1, H1N1, brucellosis?, trypanosomiasis?
Economic logic for investment in One Health
Impact of a health problem

Output ($, €, ¥, £, DALYs)

Without the health problem

With control

Losses due to the health problem

Losses with control

With the health problem

Time
Economic logic for investment

• Economic logic:

Where **Avoidable Losses** are greater than **Costs of a Change in Disease Status**

the investment is **worthwhile**
Where would this economic logic translate into success for One Health?

- Specific diseases
- Where resources are scarce
- Where resources are underutilised
Specific diseases

Strong argument for specific, specialised approaches

Arguments for systems approaches and more generalisation
Specific diseases

- We could also argue that what we do in the food chain in terms of processing and refining food has important implications on nutritional health.
- These aspects are rarely treated as One Health issues and are invariably observed and worried about rather than thinking of the underlying causes.
- These would require a more general rather than disease specific approach.
Extensively managed sheep in Bolivia
Where resources are scarce

• Many people live in geographical isolation
• A large proportion of these people are reliant on livestock
• Making resources available for either human or animal health is difficult due to the limited availability of trained resources and the lack of demand for such services
• The need for One Health approaches would make sense in terms of matching overall demand for animal and human health services and the potential to supply adequate services
• Strong arguments for generalised services
Extensively managed pigs in Bolivia
Where resources are underutilised

• Many **facilities** are built that have **low throughput**
• Human resources are trained in **data collection, storage** and **analysis skills** but:
  • in too fewer numbers and/or
  • with a **low demand** of their skills in their specific health field
Where resources are underutilised

• Low throughput and low demand often leads to poor calibration of standards and variable output of results
• Small numbers of trained people limit interchange and advancement in knowledge
• There are strong arguments that certain aspects of human and veterinary diagnostics, data collection and analysis need to be combined to create synergies which will improve resource use
Summary

- The facilitating environments for emerging and re-emerging health problems are **dynamic**, constantly changing
- Our responses have been to **strengthen disease surveillance**
  - Internationally through WHO, OIE, FAO
  - Nationally through multi and bi lateral programmes plus regional agreements
Summary

• Benefits from One Health can be (are?):
  • **Improved understanding** of health problem emergence and re-emergence in order to **respond** in a proportionate and **timely manner**
  • **Generalised systems** of **health delivery** where **resources** are **scarce** – very specific situations
  • **Combined use of infrastructure** and **skillsets** to **improve** the use of **underutilised resources** and create **synergies**
Summary

• The **benefits** are **not constant** as the facilitating environment is constantly changing.

• These **changing benefits** have **changing costs** that can only be **estimated** with better **monitoring systems** of:
  - **livestock systems**,  
  - **value chains**  
  - **people** working within and using these chains  

• Yet we have **weak systems to monitor** the working and behaviour of **livestock systems** and their associated **chains**
Questions

• How do we improve the monitoring of facilitating environment so we can in real time:
  • Estimate health problem impact with more accuracy
  • Estimate the costs of monitoring and control
    • Direct costs
    • Institutional costs
  • Search for proportionate and rational responses that involve individuals, communities, NGOs, private and public sectors
• No one mechanism will suit all situations – it requires a systems approach
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Protecting livestock to protect people

Through a **people centered** approach with strong technical leadership