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Rural Economy and
Land Use Programme

Devising frameworks and identifying uncertainties in animal disease management

Dr Zoe Austin, Lancaster University

Risk Workshop 3-4th November 2010

Lost in Translation

**A cross-disciplinary analysis of
knowledge exchange and
effectiveness in animal disease
management**



UNIVERSITY OF
LIVERPOOL

LANCASTER
UNIVERSITY



End date – November 2011

Project team

University of Liverpool

- Dr Sophia Latham, National Centre for Zoonosis Research
- Dr Rob Christley, Clinical Veterinary Science
- Professor Jonathan Wastling, Pre-clinical Veterinary Science

University of Exeter

- Dr Rob Fish

Lancaster University

- Dr Zoe Austin, Lancaster Environment Centre
- Professor Phil Haygarth, Centre for Sustainable Water Management
- Professor Louise Heathwaite, Centre for Sustainable Water Management
- Professor Brian Wynne, Department of Sociology
- Professor Roger Pickup, Division of Biomedical and Life Sciences
- Dr Maggie Mort, Department of Sociology and Division of Medicine
- Dr David Oliver (now Stirling University)

Project aims

The project addresses two main issues:

- 1) How we can understand better the issues of complexity and uncertainty in animal disease management strategies
- 2) Why particular technical developments have been adopted and not others in the deployment of strategies of containment

Uncertainties...

- These may include:
 - **Scientific and technological uncertainties** e.g. those surrounding the nature of the ‘evidence base’ underpinning disease containment.
 - **Institutional uncertainties** e.g. those shaping the coordination of ‘effective’ cross-sectoral approaches to containment.
 - **Moral and ethical uncertainties** e.g. those defining what constitutes ‘appropriate’ and ‘acceptable’ courses of action in the event of disease outbreaks.

Disease focus

- Cross-disease analysis with a focus on current and emerging practice in three disease areas:

- *Avian Influenza*

- *Foot and Mouth Disease*

- *Cryptosporidiosis*



Cryptosporidium Oocyst

Strategies for containing animal disease: A framework

Arenas of action

- Prevention: or reducing the occurrence of animal disease.
- Anticipation: or recognising, predicting and planning for outbreaks.
- Alleviation: or arrangements for response to disease-occurrence.

Level of policy

- The strategic level: structures and processes that shape principles of containment.
- The tactical level: where strategic goals and influences are translated into rules, procedures and tools for decision making.
- The operational level: practical contexts of disease containment - outcomes/repercussions of strategic decisions within containment.

Uncertainties in the governance of animal disease: an interdisciplinary framework for analysis

(2010) Robert Fish, Zoe Austin, Robert Christley, Philip M. Haygarth, Louise Heathwaite, Sophia Latham, William Medd, Maggie Mort, David M. Oliver, Roger Pickup, Jonathan M. Wastling, Brian Wynne (*in prep*)

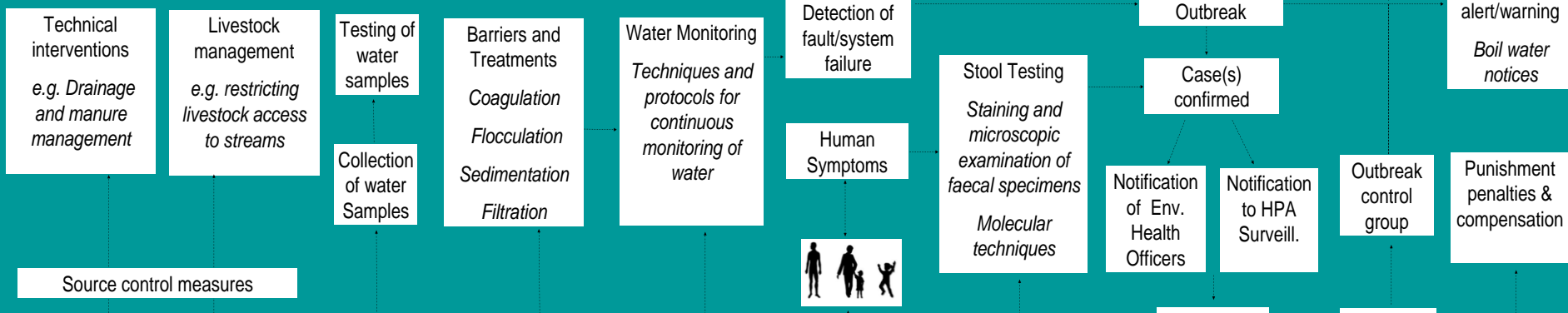
Cryptosporidium.

	<i>Policy Level</i>		
<i>Strategy of containment</i>	<i>Strategic/ command</i>	<i>Tactical</i>	<i>Operational</i>
<i>Prevention</i>	<i>Catchment management Programmes</i>	<i>Scheme Prescriptions/ Items of work.</i>	<i>Farmer and advisor conduct</i>
<i>Anticipation</i>	<i>United Utilities Chief Scientists Group</i>	<i>Design of sampling Strategy</i>	<i>Slide analysis of water samples</i>
<i>Alleviation</i>	<i>Outbreak control Teams</i>	<i>Case attribution strategy/public communications</i>	<i>Issuing of boil water notices</i>
<i>Care</i>	<i>Compensation policy of Utilities</i>	<i>Legal mechanisms</i>	<i>Compensation to affected businesses through negligence</i>

Prevention → **Anticipation** → **Alleviation** → **Care**

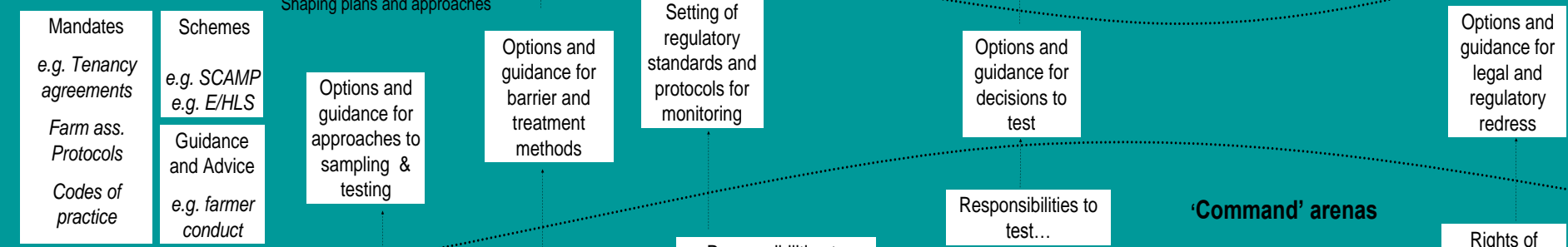
'Operational' arenas

Implementation of measures



'Tactical' arenas

Shaping plans and approaches



'Command' arenas

Political and ethical domain of intervention



Research strategy

- Semi-structured interviews with experts at the strategic, tactical and operational levels
- Disease specific workshops addressing areas of uncertainty identified from interview data
- Analysis of secondary data (existing archived material)

Examples of interview questions

- How is significance assigned to a particular disease?
- How does the historical position of a disease influence current containment practice?
- What is effective containment practice?
- What are perceptions of strengths and weaknesses in present containment practice and policy?
- How effective is policy and practice in prevention and anticipation of outbreaks?

Analysis: Identifying cross disease themes

- Preliminary analysis of interview transcripts
- A number of 'themes' have been identified
- Themes relate to areas of uncertainty and dispute
- Themes occur across disease areas but appear to vary in level of importance between them

Process: Identifying cross disease themes

Step 1: Open coding

Read through interview transcripts marking 'significant' and recurrent issues and assign these into 'codes'

Step 2: Data refinement

Discuss and refine codes with research team, and group into substantiated 'themes'

Process: Identifying cross disease themes, steps 1 and 2: example

Quotes:

A number of quotes were identified relating to uncertainties and dispute surrounding the development of technologies for use within the animal disease strategy

Open codes:

Cost of developing new technology may be prohibitive

Lack of sharing of data/samples e.g. Difficulty obtaining samples from some parts of the world could decrease the speed of response to newly emerging strains

Ethical uncertainty and practical difficulties in ensuring that all countries benefit from isolate sharing

Theme:
“Development of new technologies”

Theme
Role and expertise of individual (T1)
Media Coverage (T2)
Political Will/Motivation (T3)
Funding (T4)
Priority given to Disease (T5)
Changes in Regulation (T6)
Research & Development (T7)
Role of Industry (T8)
Role of Animal and land Management (T9)
Stakeholder Base (T10)
Development of new technologies (T11)
Use of new & existing technologies (T12)
International Differences in regulation (T13)
Human Behaviour (T14)
Underlying objectives of outbreak response (T15)

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Step 3: Consultation

Themes discussed with stakeholders within disease specific **workshops**. Relevance and importance as well as missing elements are assessed.

Step 4. Final stages

Once themes have been reviewed and then the interview transcripts re-visited, relationships between themes can be established and assessed further

Workshop aims and objectives

- The workshops form an important stage in the process of the analysis, assessing:
 - The relevance of the identified themes
 - Gaps in the identified themes
 - Their validity, scope and completeness
 - Relative importance/priorities for the future
 - Cross-disease containment strategies

Cryptosporidium workshop – London. 12 participants with representation from NHS, VLA, HPA, water utilities.

Avian Influenza workshop – Oxford in conjunction with ‘Influenza 2010’ conference. 14 participants with international representation.

Foot and Mouth workshop – Vienna in conjunction with EuFMD commission conference. 23 participants with international representation.





Critical review of content and importance of themes

- Are all of the themes relevant?
- Have we missed any?
- Additional comments relating to existing themes?
- What can be added to our understanding of these themes?

Importance and likelihood of themes

- Scoring exercise relating to importance of uncertainty themes and likelihood of occurrence.
- Groups allocated by occupational area:
 - Research
 - Government/policy
 - Industry





Preliminary workshop findings

- Currently identified themes received well by workshop participants
- Missing theme of “communication”?

Challenges of working at a cross-disease level?

- International differences

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