

# GW4

**Changing paradigms :  
Six principles for understanding the social drivers of resistance risk**

**Professor Stephen Hinchliffe  
FAcSS**

**College of Life and Environmental Sciences  
University of Exeter**



# Introduction

## Global AMR Action Plan - Strategic Objectives

<http://who.int/antimicrobial-resistance/global-action-plan/en/>

1. Improve awareness and understanding
2. Strengthen knowledge and evidence base
3. Reduce incidence of infection
4. Optimize use of antimicrobial medicines
5. Develop economic case for sustainable investment



Develop a national AMR action plan in place by May 2017



Culture | Context of Health and Well-being



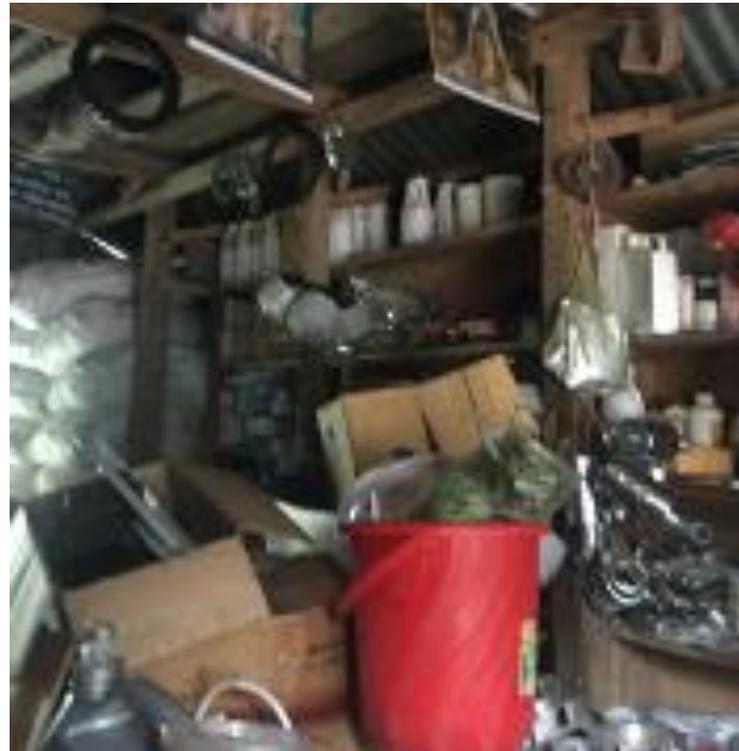
Hinchliffe, S. 2021 Postcolonial global health, post colony microbes and AMR, *Theory, Culture and Society*, <https://doi.org/10.1177/0263276420981606>

- Knowledge deficit implies a social model, where individuals **receive** information and **act** accordingly...
- We need to question this, it's a fiction. Here are some principles that help us build something better.



# Principle 1: Choices are rare social events

- Actions are **conditioned** by the social and material environments within which they unfold
- ‘Antibiotics are infrastructure’ (Chandler 2019) - They make up for the **structural deficiencies** that exist in other areas (lack of veterinary support, weak biosecurity, the economic marginalization of farming and so on)



Farm supply shop, near Khulna, Bangladesh: Author photo

# Principle 2: Information is made sense of in context

- Farmer: “The medicines are poor and often don’t work”.
- SH: So why use them?
- Farmers: (Laughter) If the fish all die, we have nothing.
- (More information and awareness won’t change this!)



Aquaculture farmers, Mymensingh, Bangladesh  
Photo source: author

# Principle 3: Problem solving is sociological



DIAL – UK based qualitative work on diagnostic practices and innovation in livestock (in-depth interviews with vets, farmers, innovation companies, survey of BVA vets, focus groups with farmers, field trial)

Buller et al 2020 Veterinary diagnostic practice  
*Front. Vet. Sci.* 15

*Can rapid pen-side tests replace ‘guesswork’ of diagnostic practice?*

*Poultry vet: “We never treat in isolation, it’s always in context. ... a **high level of E.coli doesn’t mean that they need treatment.** (...) [What else is important?] How do the birds look on the farm, the mortality figures that have been reported that sort of thing. We have treatment thresholds that we go off. (...)*

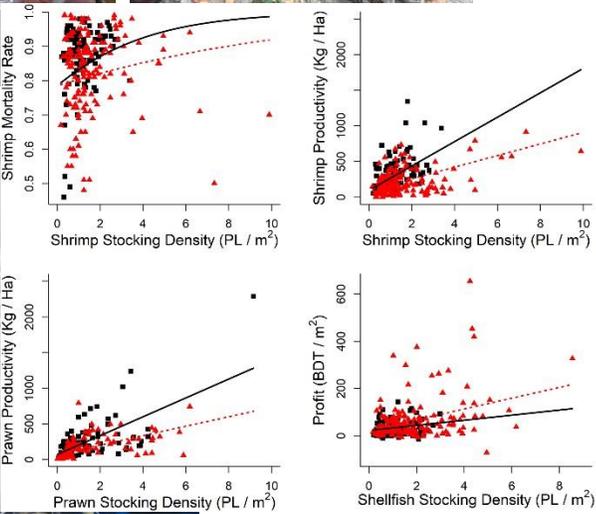
*“Sometimes **you have to treat sub-clinical levels** of Enterococcus because it can [indicate] severe lameness later on. (...) it’s not only cheaper for the client, but you’re actually using a lot less antibiotics, so it’s much more responsible, rather than using it when they’re 2 kilos heavier, and they’re less likely to respond to treatment anyway...”*

Problem transformation (from clinical sign to disposal) involves balancing data, past and future farm health, clinical judgements and business insights.

**No fixed knowledge hierarchy exists**



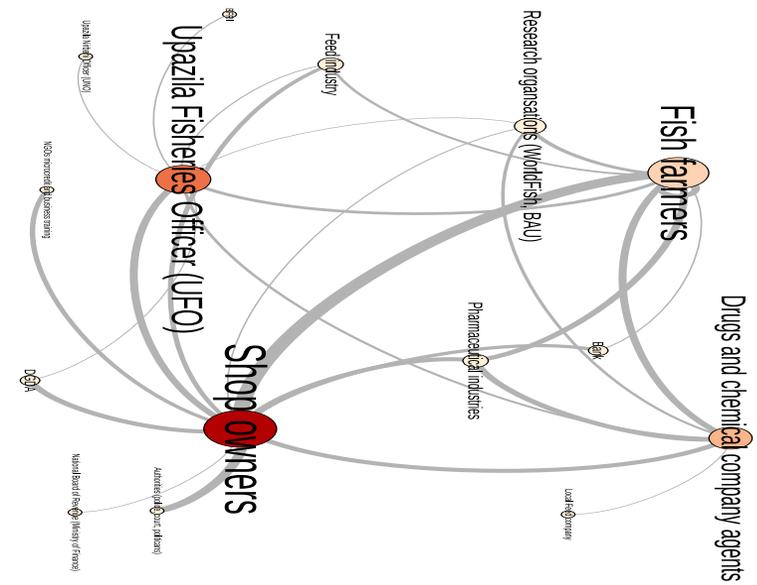
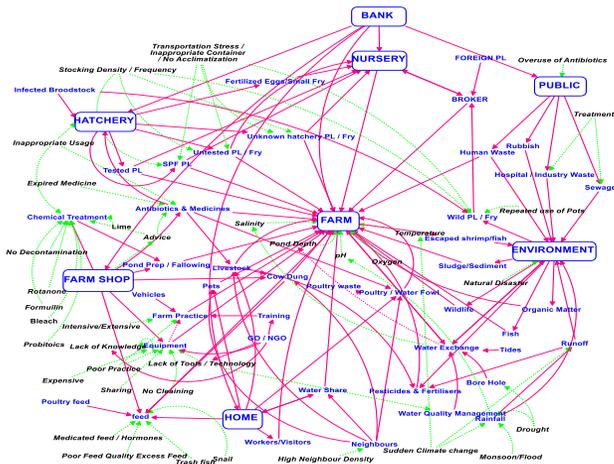
# Principle 4: One size does not fit all



- Analysing detailed farm outcomes (n.300) demonstrated disease burden is managed by minimising effects of disease on livelihoods
- Farmers manage frequent disease and other challenges by **stocking frequently**, mixing species and seed sources, and harvesting opportunistically
- To realise the benefit of the new SPF/ PCR tested seed, they were encouraged to adopt single (batch) stocking and harvesting.
- Paradoxically, 'disease-free' farming made medicine use (acts of desperation) **more rather than less** likely.



# Principle 5: Co-produce strategies for change



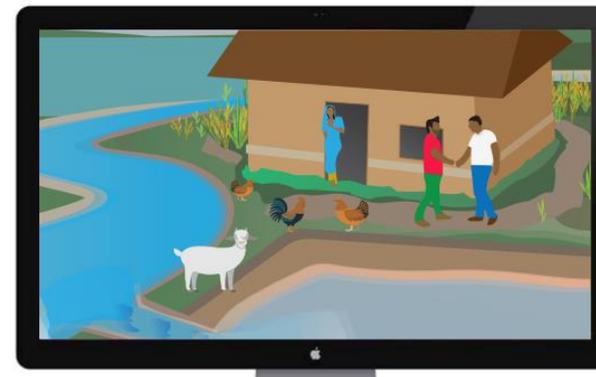
# Principle 6: Routines, economies of effort and organizational intersections matter

- Interventions need to work within frames of reference (routines, organisations, norms...)
- Animation developed with FAO, Bangladesh to shift practice from reliance on farm shops to involvement of local fisheries office
- (Lead: Kelly Thornber, University of Exeter)
- [Link to animation](#)

*If you don't know what the problem is, contact your local fisheries officer.*



*Your local fisheries officer will come to look at your pond and talk with you about the problem.*



# Changing paradigms

Principle 1: Choices are rare social events

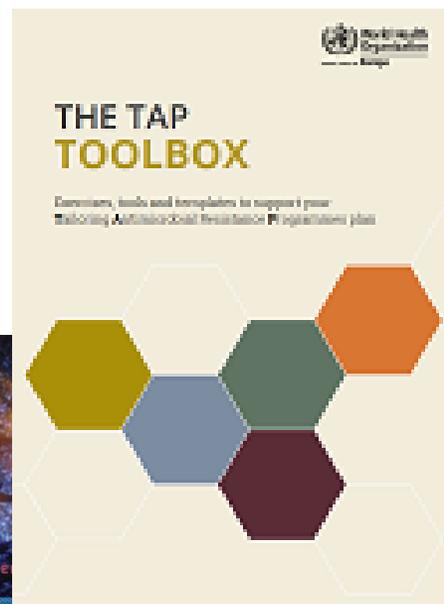
Principle 2: Information is made sense of in context

Principle 3: Problem solving is sociological

Principle 4: One size does not fit all

Principle 5: Co-produce strategies for change

Principle 6: Change routines and frames of reference



THE STRUCTURE OF SCIENTIFIC  
REVOLUTIONS

THOMAS S. KUHN

WITH AN INTRODUCTORY ESSAY BY IAN HACKING

- Change is more than cognitive (requiring biomedical knowledge), it is sociological
- Routines, economies of effort and organizational intersections matter
- ‘Tailoring Antimicrobial Resistance Programmes’ (TAP)
- Change happens once pathways become available and productive
- Social science provides skills to judge lock-in, conditions for change, key tipping points and unintended consequences of actions...



# Thanks

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