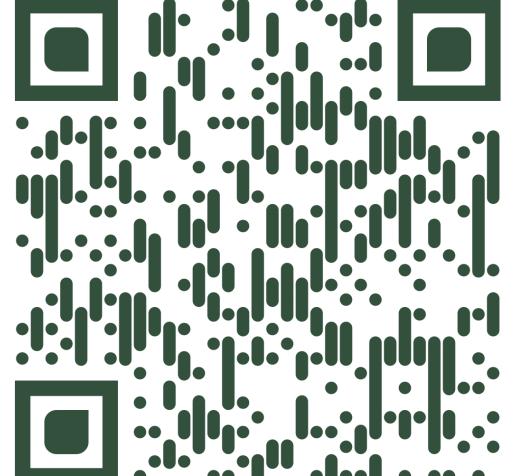
# **Development of a research tool leveraging** theoretical frameworks to better understand **One Health systems thinking**

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To mobilise a **'just transition'** in global food systems, we must first appreciate what key actors **think** and **feel**, as these influence how they act



^ read the full paper in CABI One Health

## Background

- Mainstream global food systems challenge all One Health components: people, animals, and the planet
  - Industrialised animal-source food (ASF) production is particularly harmful
  - >80 billion land animals + trillions of farmed fish slaughtered for meat annually = widespread welfare concerns
  - → ASF production is a key driver of the triple planetary crisis: biodiversity loss, climate change, pollution
  - └ Inequitable concentration of food insecurity and malnutrition in low- and middle-income countries, despite intensive production worldwide
- Urgent calls for a 'just transition' in global food systems
- Farmers are key actors in food systems reform, but need support, not pressure, in changing production practices – their livelihoods and own wellbeing is at risk
- Current research on livestock farmer attitudes, cognitions & behaviours is incomplete:
  - Theoretical underpinnings suboptimal for intervention design
  - Validity of measurement instruments often unclear
  - Siloed efforts = lack of comparability & reproducibility



Our aim was to develop a holistic, repeatable measurement instrument, with a strong theoretical underpinning, to enable researchers to better understand One Health systems thinking among livestock farmers, and others.

**Our findings** underscore the importance of validating mappings of statements against theoretical models to ensure accurate identification of behavioural determinants, informing evidence-based intervention design.

Final statement table mapped onto the COM-B model and Theoretical Domains Framework\*

ategory	Statement	COM-B Component (high-level)	COM-B Component (detailed)	Domain	Construct												
	I know how to communicate with other people.			Skills	Interpersonal skills												
	I have broken bad habits to improve my wellbeing.	Capability	Psychological	Behavioural Regulation	Breaking habit	e											
	I know ways to improve my own mental wellbeing.			Knowledge	Procedural knowledge			Capability	Psychological	Knowledge	Knowledge (including knowledge of condition/scientific rationale)						
	I am physically healthy.		Physical	Skills	Ability		I know my animals have feelings.										
	I have access to the resources I need, such as time and money, to live a good life.		Physical	Environmental Context and Resources	Resources/ material resources		I know how to ensure my animals live good lives.										
	I have people who I can turn to for help.	Opportunity			Social support		I do not know how to optimise the wellbeing of my animals.				Procedural knowledge						
	I have people around me who support me.		Social	Social Influences			I know what to do to improve the wellbeing of my animals.							СОМ-В	сом-в		
	It is important to me to have the approval of my friends and family.	-			Social pressure		My physical health makes it difficult to take good care of my animals. I cannot give my animals everything I think		Physical	Skills	Ability	Category	Statement	Component (high-level)	Component (detailed)	Domain	Construct
Human -	I feel guilty if I am unable to fulfil a goal, promise, or intention.		Automatic	Emotion	Affect		would benefit them because doing so is too expensive.		Physical	Environmental Context and Resources	Resources/ material resources		The environment is being harmed by the combined actions of individual people.	of	Psychological	Knowledge	Knowledge (including knowledge of condition/scientific
	I find looking after my well-being rewarding.	_	Automatic	Reinforcement	Rewards		I have access to all the resources I need to take good care of my animals.						I know what I have to do to be more				rationale) Procedural knowledge
	I can usually handle whatever comes my way.	_		Beliefs about Capabilities	Self-confidence		I have enough time to do things that would improve the lives of my animals.						environmentally friendly. I have changed some of my habits in order to be more environmentally friendly			Behavioural Regulation	Breaking habit
	I am confident that I could deal effectively with unexpected events.						I have other people who help me improve the lives of my animals.	Opportunity	Social	Social Influences	Social support		My poor physical health makes me unable to do things that would benefit the environment (e.g., walking places instead of		Physical	Skills	Ability
	I am self-confident.	_					My friends and family support me when I want to change things to improve the lives of my animale						driving) My physical environment makes it difficult				Personal x
	When I set my mind to something, I am always able to accomplish it.				Perceived behavioural control		of my animals. Other farmers I know take steps to improve	-			Group norms		for me to take actions that would be environmentally beneficial.		Physical	Environmental Context and Resources	environment interaction
	I adapt easily to change.						the wellbeing of their animals.						I have access to all the resources I need to take actions that minimise negative environmental impacts.				Resources/ material resources
	I find it difficult to form healthy or beneficial new habits.	_			Self-efficacy		Others I work with (e.g., purchasers, industry associates) pressure me to improve the wellbeing of my animals.				Social pressure		I do not have time to do things that would lower my environmental impact.				
	I feel that I have several good qualities.	Motivation			Self-esteem	Animal	I feel pressure from others to improve the wellbeing of my animals.						The cost of eco-friendly initiatives makes them unrealistic.				
	I can do things as well as most other people.		Reflective				I feel emotionally connected to my animals.	y	Automatic	Emotion	Affect		Others I work with (e.g., purchasers, industry associates) encourage me to be	-	Social	Social Influences	Social pressure
	Overall, I am satisfied with myself.	-					I care about how my animals feel.						more environmentally friendly.				
	I enjoy interacting with other people.	-		Social/ Professional Role & Identity	Social identity Professional identity		I feel good when my animals are doing well.						environmental impact. Caring for the environment is our social				
	I am motivated to help people I know.	_					I worry that I cannot take good enough care of my animals.						responsibility Other farmers I know are taking steps to				Social norms Modelling
	Other farmers respect and look up to me.	-					Taking good care of my animals is within my control			Beliefs about Capabilities	Perceived behavioural control	Planet	minimise negative environmental impacts. I feel guilty if I do something that harms the	-	Automatic	Emotion	Affect
	Other farmers come to me for advice.	_					It is in my nature to want to take good care of my animals.				Beliefs		environment I feel a sense of connection to the planet and wildlife.				
	I am an optimistic person.	1			Identity		I believe I will benefit from taking good care of my animals.				Outcome expectancies		I am worried about the health of the planet.				
	I take a positive attitude toward myself.	1		Optimism			If animal wellbeing is maximised, there are						I worry about the impact I have on the environment.				
* S	When I learn new information, I put it into action.	-		Intentions	Stability of intentions	-	negative impacts on farm productivity and economics.			Beliefs about Consequences			I feel good when I know I am doing something that is good for the environment.			Reinforcement Beliefs about	Rewards
	1	1	1	1			Improving the wellbeing of my animals will be beneficial for my farm and business.						It is within my power to positively impact the environment. I am confident that there are actions I can the theta the second sec				Self-confidence
	tatements can be assessed using Likert scales d quantitatively analysed using Principal					I will experience benefits/rewards if I take steps to improve the wellbeing of my animals	-					take that will benefit the environment.	Motivation		Capabilities	Self-efficacy	
						The benefits of taking good care of my animals outweigh the costs.				Beliefs		If I do things to reduce my environmental impact, the health and wellbeing of my					
	mponent Analysi	-	-				A main responsibility of a farmer is to uphold the wellbeing of his/her animals.	-		Social/ Professional Role	Professional identity		animals will also improve. The benefits of preserving the environment outweigh the downsides e.g., costs.		Reflective	Beliefs about	Outcome expectancies
	rther guidelines for use.						The wellbeing of my animals is one of the most important things in my life.	-		& Identity Goals	Goal priority		I will experience benefits/rewards if I take action to preserve the environment.			Consequences	
							nisst important unings in my inc.						Taking care of the environment comes at the expense of my farm efficiency/oroductivity				Anticipated regret
													efficiency/productivity.	1		Social/	

#### **Methods**



Developed 78 statements relating to human, animal, or environmental wellbeing (n=26 each)

Four independent researchers mapped each statement to the capability-opportunity-motivation-(FFS) behaviour (COM-B) model and Theoretical Domains Framework of the Behaviour Change Wheel

- └ Tested for inter-rater reliability
- Second Secon

Piloted for acceptability with British livestock farmers

Our tool will enable insights into One Health

systems thinking in farmers, and others, informing the development of **behavioural support** measures to foster transformation alliances and mobilise real-world action towards food system transformation.



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### **Global Agriculture and Food Systems**

 Professional Role & Identity
 Professional iden

 Goals
 Goals



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