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DEVELOPMENT  
GOALS

# *Needs on biosecurity to achieve impact at scale*



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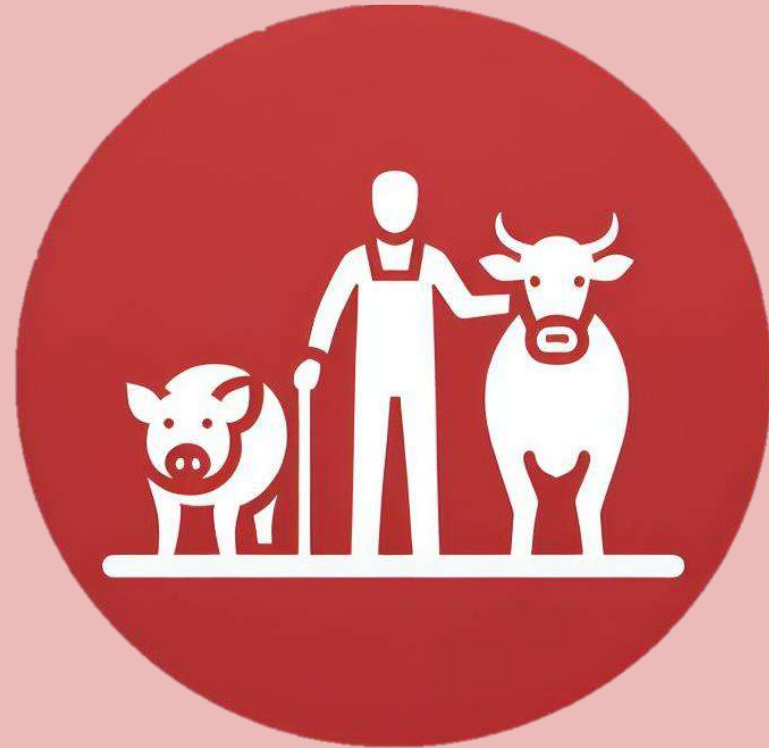


## Promoting biosecurity at two levels



*Policy Level*

**LMICs**



*Field Level*



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# Needs on biosecurity at the policy level



# **1. Shift focus from policy development towards policy implementation**



A lot of efforts have been put to address animal health threats in a more strategic way



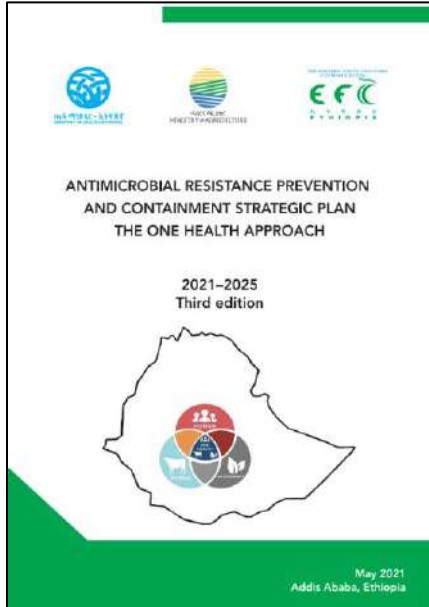
Over the last decade, **156 countries** developed an AMR National Action Plan (**48%** of them developed between 2020 and 2024)

... on top of many One Health policies or strategies





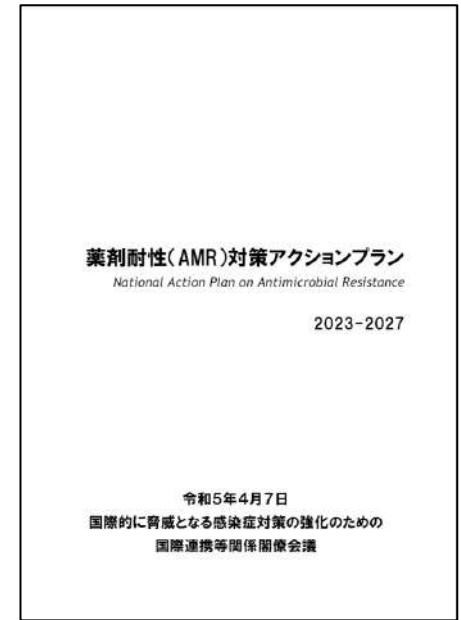
## Good husbandry practices and biosecurity are a key component in many of these strategies



<p><b>Strengthen good animal husbandry practices</b></p>	<ol style="list-style-type: none"> <li>1. Promote <b>bio-risk management and good husbandry practices</b></li> <li>2. Integrate antimicrobial resistance prevention and containment activities with veterinary outreach services and vaccination access</li> </ol>
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Changing the behaviour of **value chain actors** (farmers, traders, market vendors,...) is crucial to implement plans/strategies

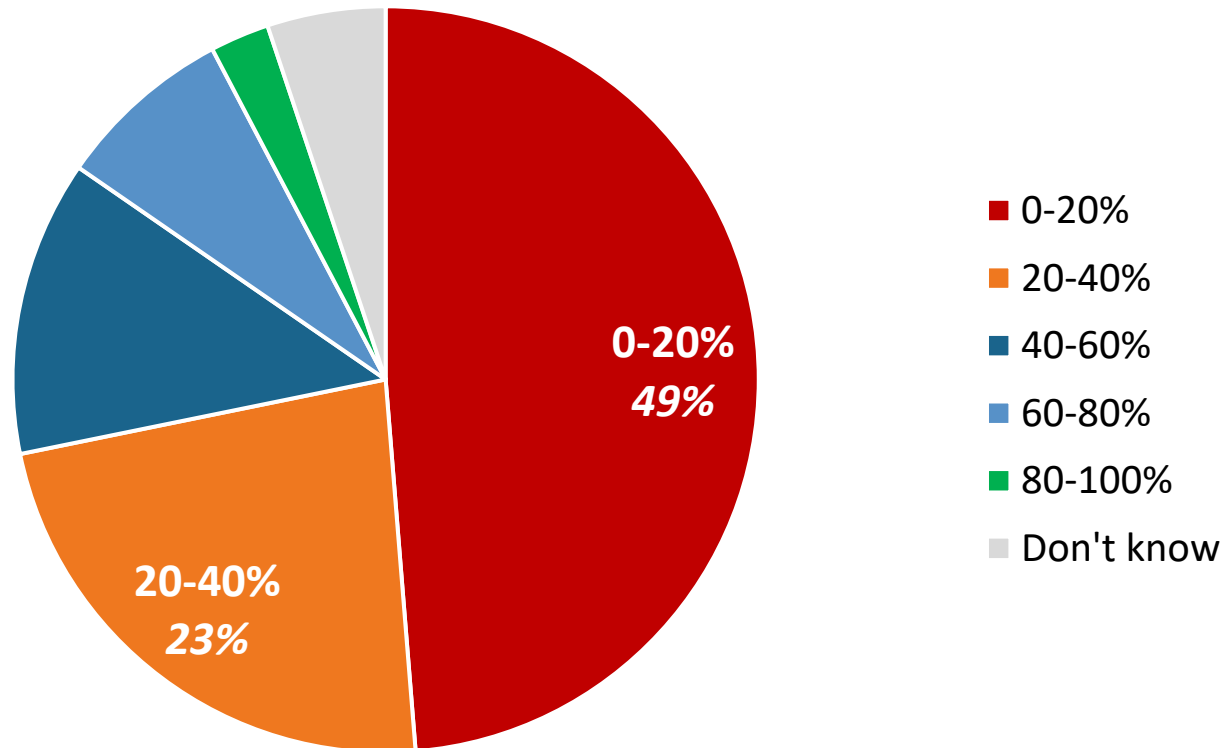
- **Ensure compliance with the biosecurity standards** based on the provisions of the Act on the Prevention of Infectious Disease in Livestock, and disseminate the Handbook for Hygienic Practice during Primary Production





## But what about the actual implementation of these plans?

**“What percentage of the activities in these plans/strategies are fully funded and implemented in developing countries?”**

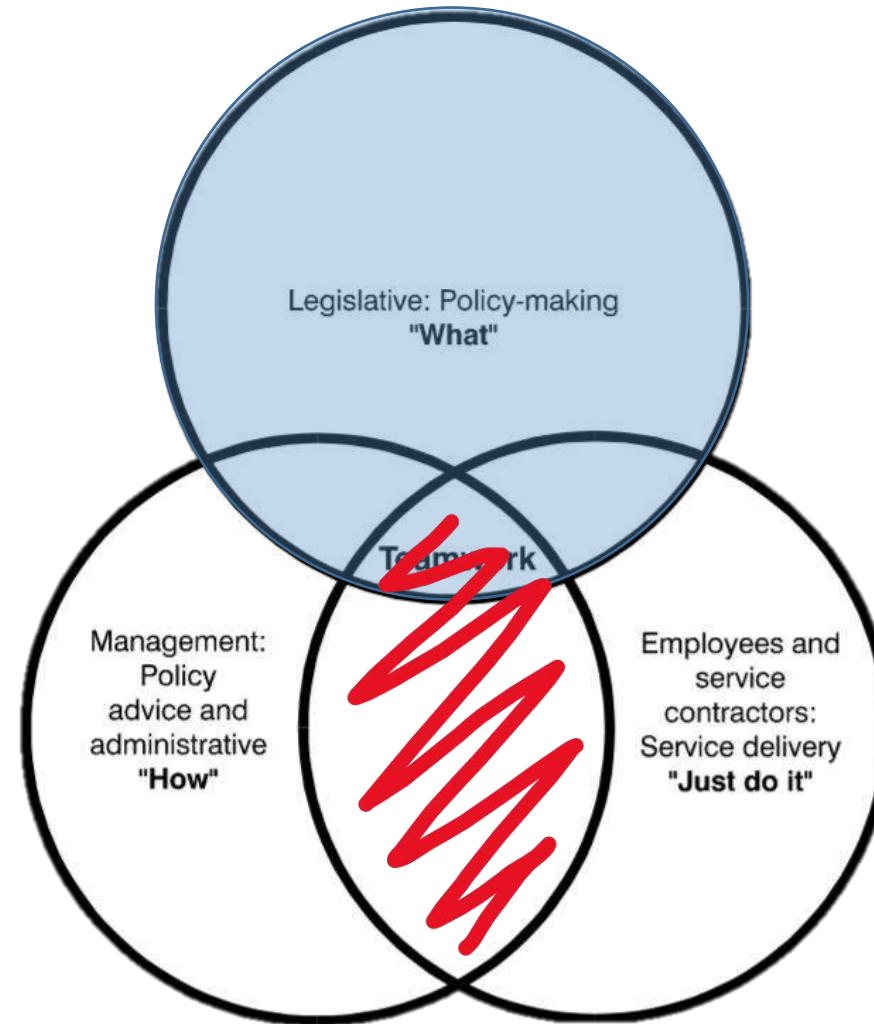


**Global Health  
Security 2024**  
INTERNATIONAL CONVENTION CENTRE  
SYDNEY 18 - 21 JUNE 2024

**72% answered less  
than 40%**



## Shift the focus towards policy implementation



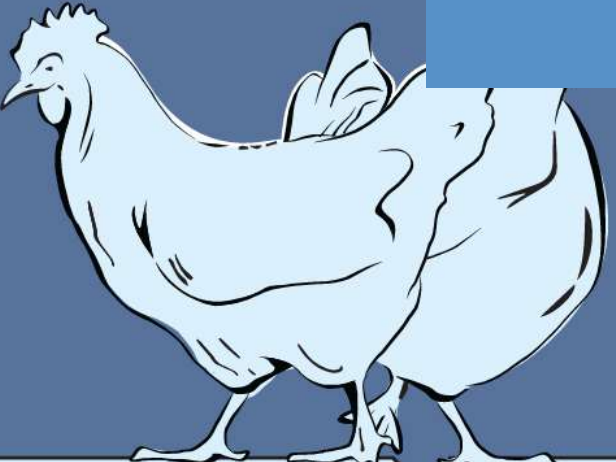



## 2. Policies must be realistic

- Capacity of public sector to implement them
- Existing business models




## Capacity of public sector to implement policies



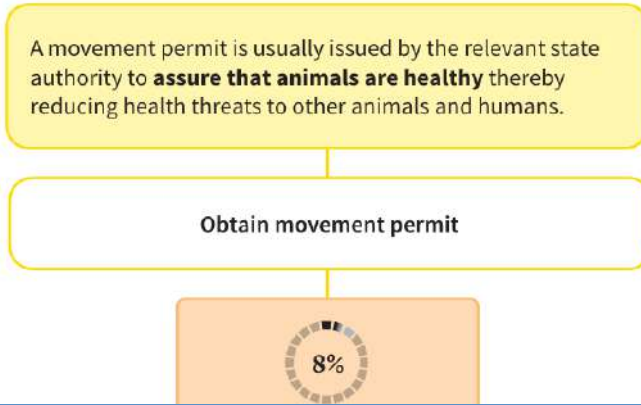
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**AFRICA  
SUSTAINABLE  
LIVESTOCK  
2050**

**LAWS AND FLAWS**  
 Implementation gaps in  
 biosecurity-related legislation  
 in the poultry sector  
*Evidence from*  
**KENYA & UGANDA**

 **USAID**  
 FROM THE AMERICAN PEOPLE  
 Financial support provided by the United States  
 Agency for International Development (USAID)

**ASL  
2050**



*In Kenya, movement permits are only required for transport outside the district*

Commodity	Thousand tonnes			% change
	2010	2030	2050	2010-2050
Beef	467	734	1 277	173%
Milk	4 839	7 513	13 298	175%
Poultry	26	48	71	174%
Egg	89	238	537	503%
Mutton & Chevon	87	103	127	46%
			48	268%

*Projections. Source: FAO projections, Acosta and Felis (2016)*

## Can we find a second best?

**Table 1.** Animal health staff in Kiambu and Nairobi City counties and in the Directorate of Vet Services

	Staff in post	Staff expected	Variance	In- post level
Kiambu County	104	230	- 126	45%
Nairobi City County	48	188	- 140	26%
State Department of Livestock Directorate of Veterinary Services	47	1620	- 1147	29%



## Existing business models define the boundaries for compliance



*Policies that go against existing business models will face resistance*



### 3. Need for a more inclusive process for policy development

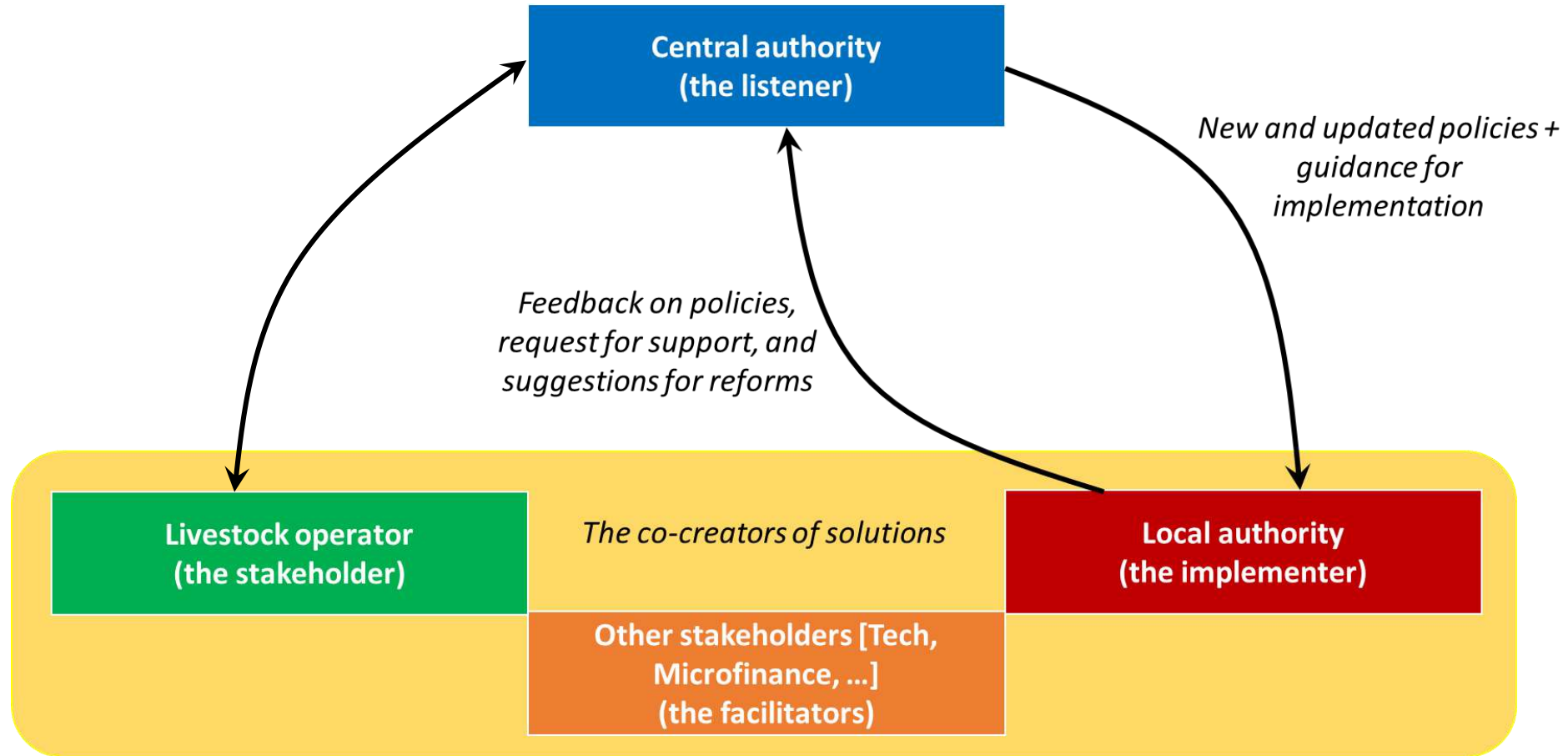


## Opening the policy dialogue





## Opening the policy dialogue



***Optimize policies according to the local context and/or address constraints for implementation***



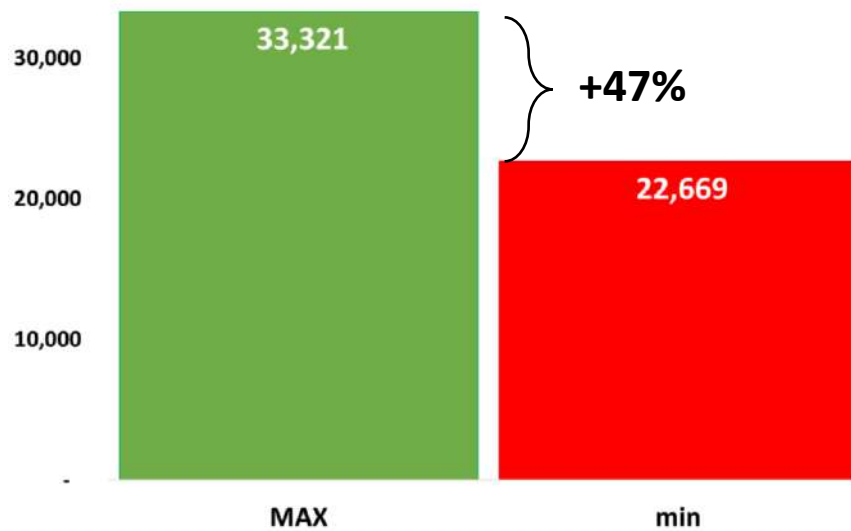
## 4. Recognize and address decentralization challenges



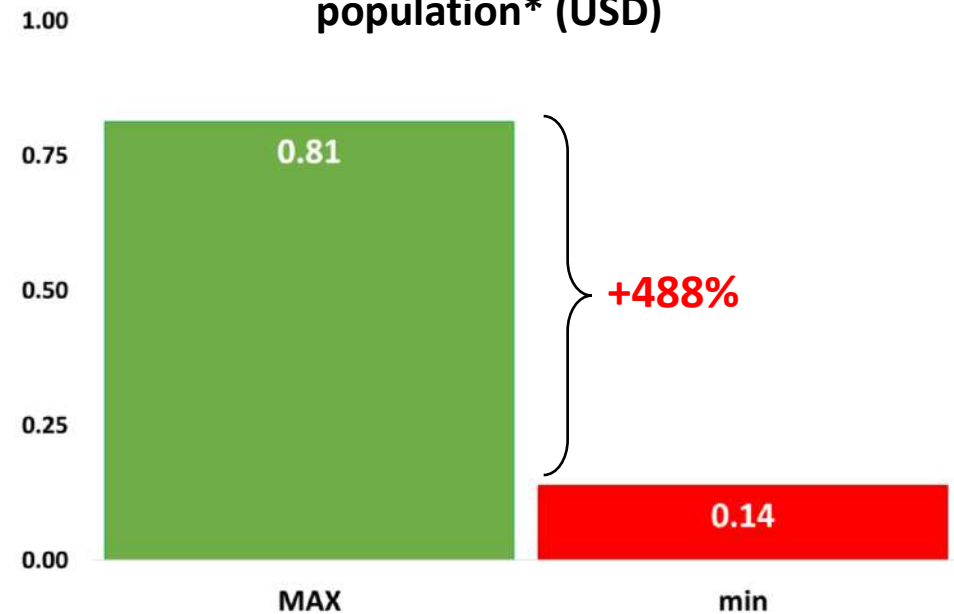
## Understanding challenges due to decentralization to implement policies

- Same laws but different budgets

Local budget assigned to Vet  
Services\* (USD)



Budgets adjusted by livestock  
population\* (USD)





## Understanding challenges due to decentralization to implement policies

### *Decentralizing functions requires decentralizing funds*

**Table 2. Subnational Expenditure Shares in Southeast Asia**  
(percent of total government expenditure)<sup>a</sup>

Country	2001-2002	2015-2018
Cambodia	NA	7
China	69	91
Indonesia	32	53
Lao PDR	N/A	31
Malaysia	13	8
Myanmar	N/A	12
Philippines	26	15
Thailand	10	19
Vietnam	48	54
<b>OECD countries</b>	<b>32</b>	<b>40</b>

Sources: World Bank (2005); OECD/UCLG (2019); respective Treasury and Finance departments.

Note: OECD = Organisation for Economic Development and Co-operation.



## 5. Integrate behavioural insights into biosecurity policies



# Integrating behavioural insights into policy

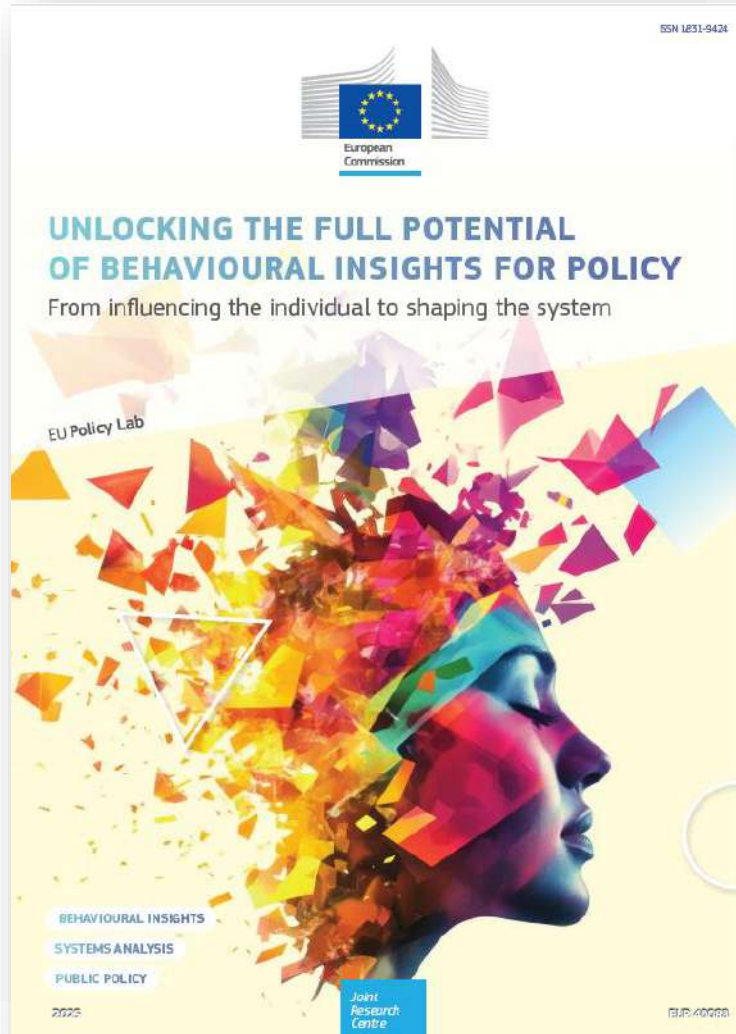


Figure ES1. Behavioural insights across the policy cycle





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# Needs on biosecurity at the field level



# 1. Co-create to engage and empower



## Co-creation to design tailored and effective solutions

*Responsible for implementing  
biosecurity*



Which changes in running  
the business can enhance  
adoption of good practices  
while improving profitability?

*Co-creation  
of solutions*

*Responsible for guiding and  
providing advice*



Which changes in working  
modalities can enable business  
changes while improving policy  
and law implementation?



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## The Progressive Management Pathway for Terrestrial Animal Biosecurity

### Progressive

**Bottom-up  
(co-creation)**



**Sustainable &  
Scalable**



# Co-creation to design tailored and effective solutions



Co-evaluation



Co-analysis



Co-planning



Co-design

## Community of Practice for Terrestrial Animal Biosecurity



Be ready for the unexpected

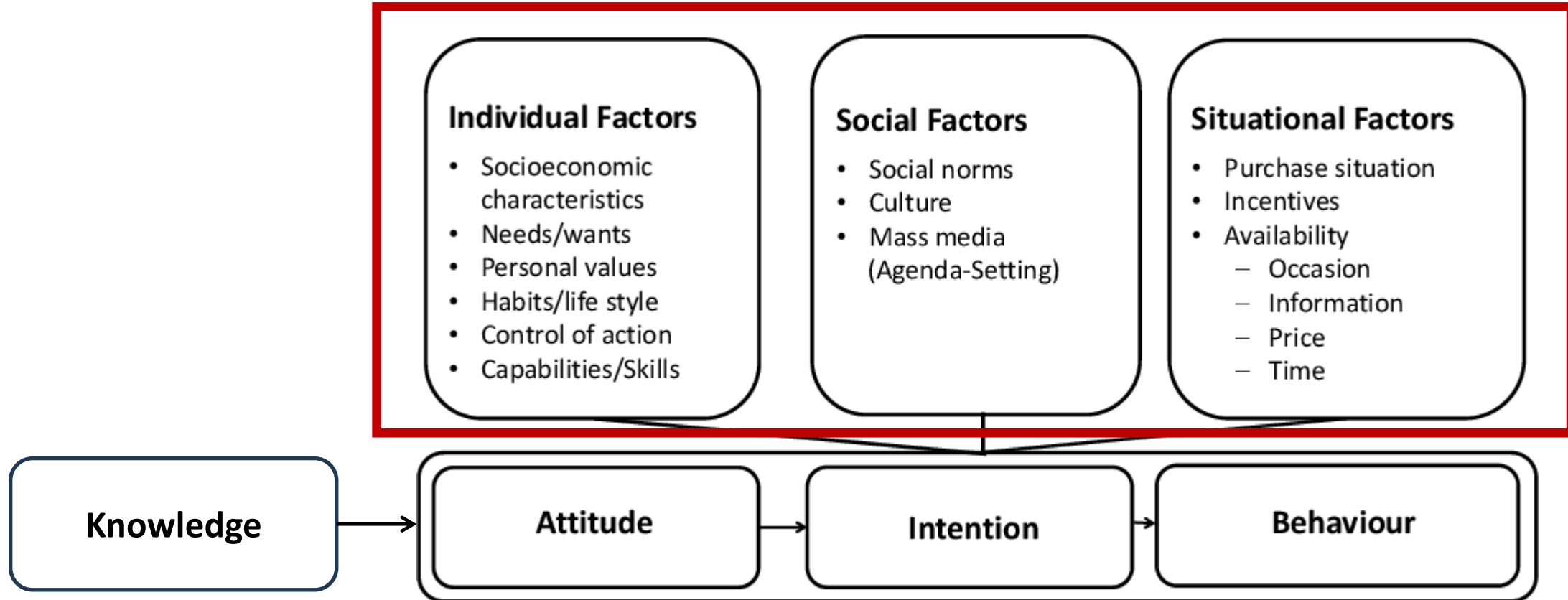


Join us!



## 2. Integrate behavioural insights into biosecurity interventions

## The traditional training-based approach has not yielded the results needed



***A bottom-up approach incorporate all factors influencing stakeholder intentions, leading to feasible and sustainable solutions***

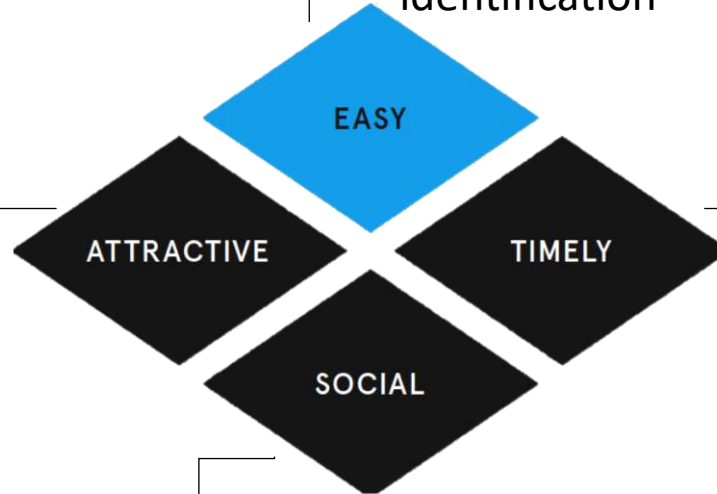
# PMP-TAB in Tanzania – incentives to generate behavioural change



**Easy:** A practical checklist, with indicators to facilitate gap identification

		SCORE	/1		
4.	Change overcoat and boots before entering pens		Boots and farm-specific clothes (overcoats) provided their use is limited to the pig pens	YES	NO
			Changing clothing and footwear after contact with animals		
			Clothing and boots are visibly clean		
		SCORE	/1		
5.	Segregate pigs by age groups		Pigs of the same age and production stage are housed/kept together	YES	NO
			All pigs are removed from the pen before the next group of pigs move in (applying all-in-all-out principles)		
			Between groups, clean pens (using soap or detergent). Allow to dry. Leave empty for 14 days before introducing new pigs		
		SCORE	/1		
6.	Good housing	Walls high enough to prevent pigs entering from	YES	NO	

**Attractive:** Responds to farmers' priorities and adds incentives



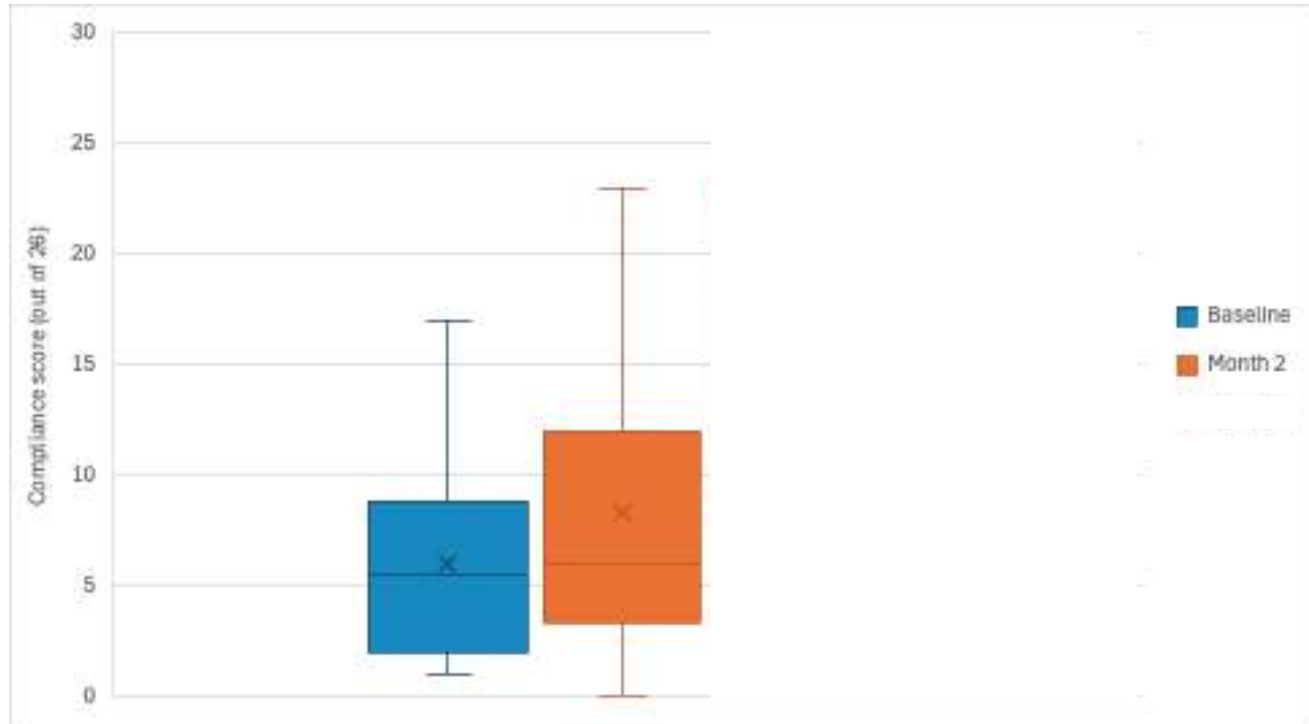
**Timely:** The measures were promoted in preparation for the African swine fever outbreak season



**Social:** Public recognition of farmers that made the most progress on biosecurity

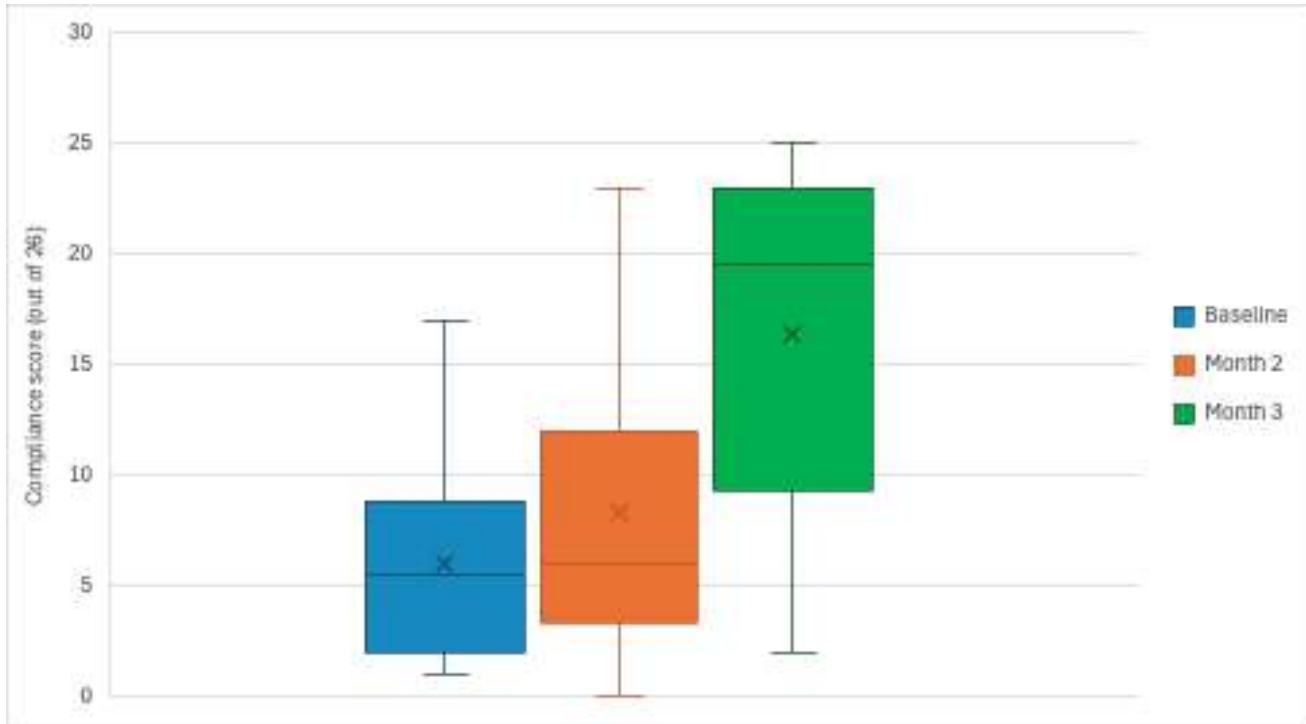


## PMP-TAB in Tanzania – incentives to generate behavioural change



The results of the trainings were limited (but **fundamental**)

## PMP-TAB in Tanzania – incentives to generate behavioural change



Real engagement has good returns

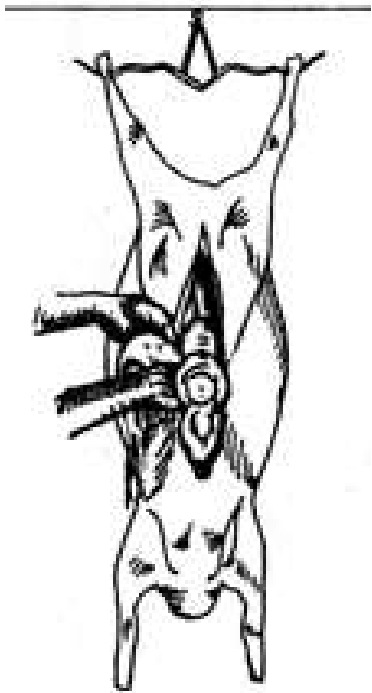




## PMP-TAB in Gabon



### *Evisceration contest*



**Easy:** Find the most convenient method to safely eviscerate an animal

**Social:** Celebrate the adoption of good practices publicly through a contest. Use the champions to lead training efforts (peer-to-peer)

**Attractive:** Provide public recognition to the best eviscerators and prizes (hunting registration fees)



### 3. Find the right entry points





## Building the case for biosecurity in Sumbawanga



## Two objectives:

1. Recognize the importance of bushmeat for food security and livelihoods in Gabon
2. Co-create solutions to reduce the risk of diseases when handling bushmeat



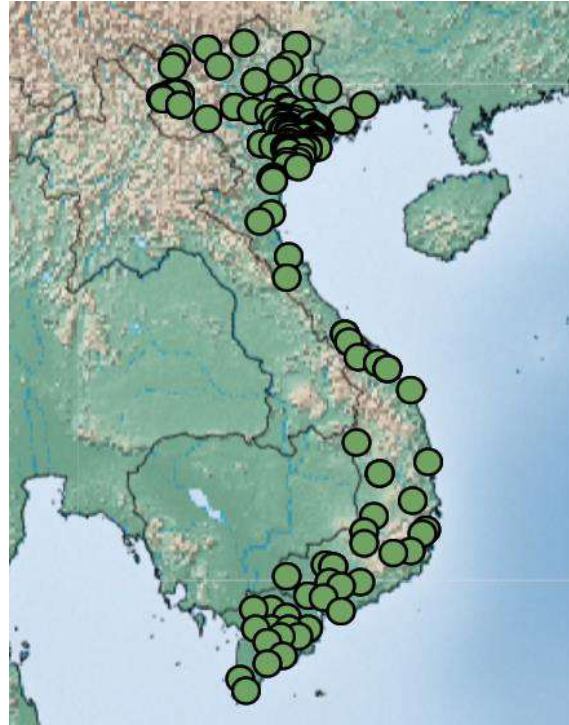
## 4. Assess the impact of your interventions

## Challenge: Good years, bad years

*African Swine Fever outbreaks in Vietnam*



2018



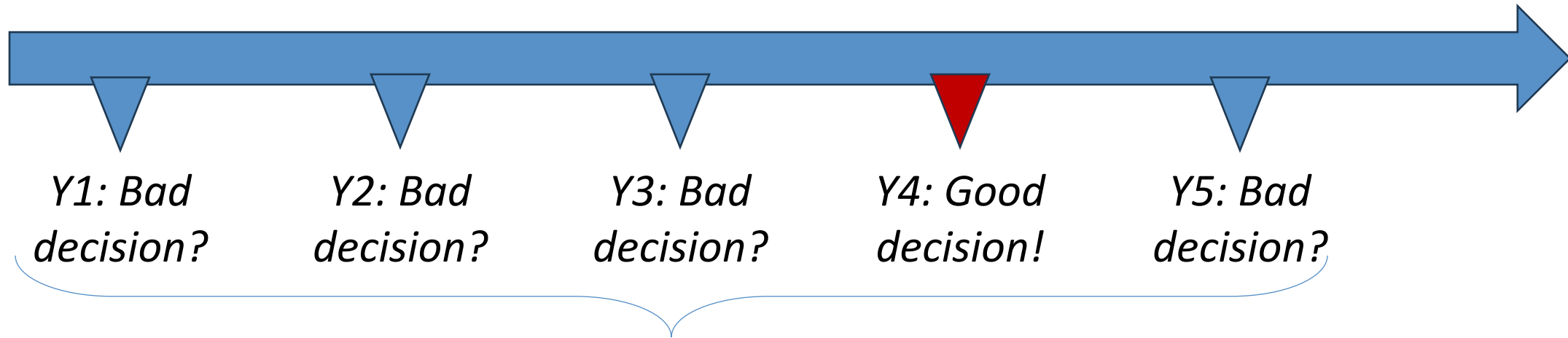
2019

*Imagine:  
A great biosecurity program  
leading to great improvements  
in 2019  
vs  
A mediocre biosecurity program  
leading to marginal  
improvements in 2018*

*How different would the impact  
be?*

## Option 1: expand the time frame

*In the selected area, unusual events take place once every 5 years...*



*Expand the time frame of your evaluation to include one unusual event*

*5 years? 10 years? Resources? Donor agreement?*



## Challenge: Good years, bad years

*'Before vs After' design for impact assessment is biased since it does not control for the temporal dimension of risk*

*Option 1: Control for the temporal dimension of risk by expanding the time frame*

*Option 2: Find control units that face the same threats over time  
How can we ensure this is the case (ex-post)?*

## Option 2: Use a control group



*Imagine Farm A and Farm B look exactly the same in terms of biosecurity practices, business models, awareness, etc. While both farms are located in settings with similar risk exposure to AI, one had bad luck...*





## Option 2: Use a control group

*Challenge: Find the right control units to control for any exogenous factor*

*Solution?: Through the expansion of the sample size and randomization (RCT approach) we can expect that **on average** exogenous factors are well controlled for*

Cluster randomised trial of the impact of biosecurity measures on poultry health in backyard flocks

[Anne Conan](#)<sup>a</sup>  , [Flavie Luce Goutard](#)<sup>a b</sup>, [Davun Holl](#)<sup>c</sup>, [Sok Ra](#)<sup>a</sup>, [Aurélia Ponsich](#)<sup>d</sup>, [Arnaud Tarantola](#)<sup>a</sup>, [San Sorn](#)<sup>c</sup>, [Sirenda Vong](#)<sup>a</sup>

Mortality rates in chicken flocks in intervention villages (mean 6.3%, range 3.5–13.8%, per month) were significantly higher than in control villages (mean 4.5%, range 2.0–9.7%, per month;  $P < 0.01$ ). Mortality rates in duck flocks in intervention villages (mean 4.1%, range 1.9–7.9%, per month) were significantly higher than in control villages (mean 2.8%, range 0.6–8.0%, per

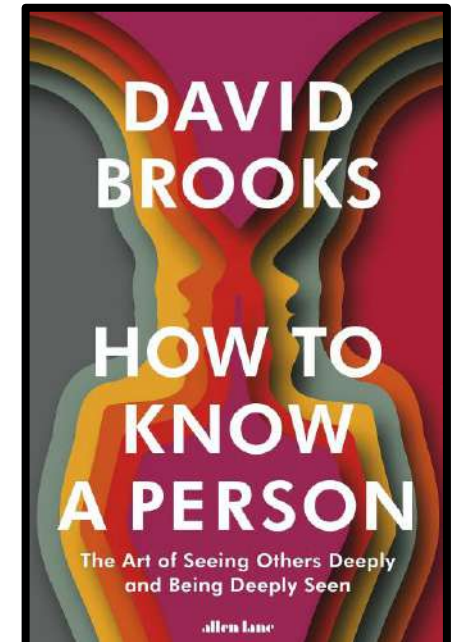
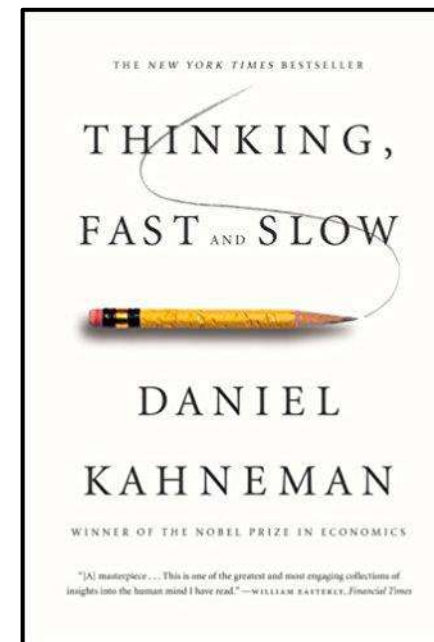
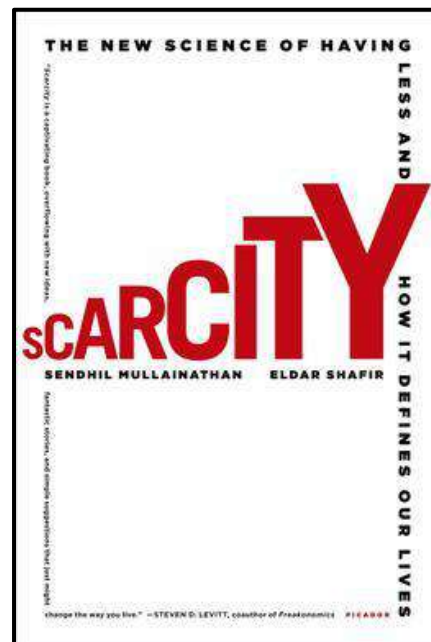
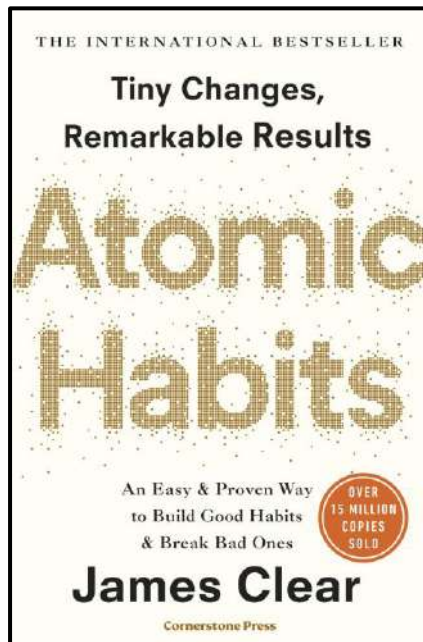


## 5. Need for a more holistic approach



## The decision-making process is complex (particularly when facing poverty)

- Resources are limited and not exclusive to one dimension of people's life
- **Livestock owners make multiple decisions simultaneously:** The time and effort that a person is willing to put in farming, depends on multiple factors:
- Creating good habits is not an easy task (for anyone!)





## The decision-making process is complex (particularly when facing poverty)

- “Poverty taxes the mind”
  - Mental bandwidth as our cognitive capacity and our ability to pay attention, make good decisions, stick with our plans and resist temptations”

*Mental bandwidth*



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*What are my kids going to eat today?*

*Mental bandwidth*



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*What are my kids going to eat today?*

*What can I do to relieve this back pain?*

*Mental bandwidth*



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*What are my kids going to eat today?*

*What can I do to relieve this back pain?*

*Mental bandwidth*

*How will I pay for the school of my kids?*



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*What are my kids going to eat today?*

*What can I do to relieve this back pain?*

*Mental bandwidth*

*What will I do if the drought continues?*

*How will I pay for the school of my kids?*



## The decision-making process is complex (particularly when facing poverty)

*What should I do to protect my chickens?*



*What are my kids going to eat today?*

*What can I do to relieve this pain?*

**Farmers will be more likely to implement good biosecurity as the scarcity (poverty) they face is reduced.**

**A holistic approach is required**

*What will I do if the drought continues?*

*How will I pay for the school of my kids?*



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*Thank you*

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