CGIAR initiative on One Health

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Presentations for Donor Calls, February 27th, 2023

More information on the One Health initiative:
Protecting Human Health Through a One Health Approach
How to Stop Food Systems from Feeding Pandemics: Embrace One Health
Initiative Components & Structure

**WP1**  
**Zoonoses**  
Reduce disease emergence and transmission at wildlife-livestock-human interfaces

**WP2**  
**Food Safety**  
Reduce foodborne disease through capacity building of market actors and incentives for compliance

**WP3**  
**AMR**  
Reduce emergence and spread of antimicrobial-resistant zoonotic pathogens

**WP4**  
**Environment (Water)**  
Improve water management to reduce infectious disease risks

**WP5**  
**Economics, governance, and behavior**  
Understand incentives for and constraints to behaviors affecting One Health
<table>
<thead>
<tr>
<th>Country</th>
<th>Key Work Package</th>
<th>Partners in countries</th>
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</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>WP1, WP2, WP5*, WP3, WP4</td>
<td>Ministry of Agriculture and Rural Development, National Institute of Veterinary Research, Hanoi University of Public Health</td>
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<tr>
<td>Bangladesh</td>
<td>WP3</td>
<td>Ministry of Livestock and Fisheries, Bangladesh Livestock Research Institute (BLRI), Cefas UK, FAO, Icddr,b;</td>
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<tr>
<td>India</td>
<td>WP4, WP2</td>
<td>ICAR, Food Safety and Standards Authority of India; Office of the Commissioner of Food Safety – Assam and UP</td>
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<td>Kenya</td>
<td>WP1, WP3, WP5, WP2</td>
<td>National and County Ministries / Departments of Veterinary Services and Public Health</td>
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<tr>
<td>Ethiopia</td>
<td>WP2, WP4, WP5</td>
<td>One Health National Platform; Ministry of Agriculture (Livestock); Addis Ababa University; Addis Ababa Food, Medicine and Healthcare Administration and Control Authority</td>
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<tr>
<td>Cote d’Ivoire</td>
<td>WP1, WP2</td>
<td>One Health National Platform, Centre Suisse de Recherche en Cote d’Ivoire</td>
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<td>Uganda</td>
<td>Leverage from other One Health projects in Uganda</td>
<td>Ministry of Agriculture, Animal Industry and Fisheries, Inter-University Council for East Africa (IUCEA)</td>
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*WP in **bold**: focus WP in the country, other: light activities in the country
Global One Health Advocacy and Influence

- COP27 “Links between climate change and zoonotic diseases emergence”
- FAO Science and Innovation Forum - FAO and WUR event
- WHO “SAGO” Scientific Advisory Group for the Origins of Novel Pathogens
- Vietnam-CGIAR climate change and ag research innovations
  World One Health Congress - Singapore, November 2022
- Quadripartite's Technical Group on AMR and Use Integrated Surveillance (QTG-AIS)
- World Health Organization Expert Committee on African Trypanosomiasis
- FCDO talk on One Health agenda
- IUCEA food safety benchmarks
- WHO's Consultative meeting on strategic guidance for prevention and control of emerging and re-emerging vector-borne and zoonotic infectious diseases in the Eastern Mediterranean region

25 articles were published in 2023
One Health Initiative collection on CGSpace: https://cgspace.cgiar.org/handle/10568/114641
Fostering national investment in One Health research and surveillance capacity

• The One Health Initiative, with the Kajiado County government in Kenya, manages a zoonoses surveillance lab established by ILRI with bilateral funding
• Kajiado County has funded a position to work in the lab in collaboration with the Initiative

• Vietnam One Health Research Partnership (ILRI + government and university partners) opened a 4th provincial field site in Thai Nguyen province
WP1: Wildlife value chains and health risks in Vietnam and Cote d’Ivoire

Objective: Identify effective strategies for managing zoonotic risks associated with wildlife farming, bushmeat consumption, and nutritional risks

- Met with stakeholders to decide on priority value chains
- Site visits to Lao Cai and Dong Nai, Vietnam
- Ethical reviews completed
- Survey tools being developed
- Pandemic working group (Vietnam) Cote d'Ivoire
- Review of literature commenced
- Survey tools being refined
WP2: Food Safety intervention in Vietnam and Ethiopia

- Protocols developed for randomized controlled trials to involve 400 semi-informal meat vendors in Addis Ababa; 68 pork markets across 5 provinces in Vietnam
- Training + voluntary rating program + consumer awareness
- Builds on existing government structures
- Pilot of intervention completed in December 2022 (Vietnam)
WP3: Antimicrobial resistance in poultry farms in Kenya and aquaculture farms in Bangladesh

**2022:** Observational studies of 130 (poultry) + 120 (tilapia) farms, repeat farm visits

- deep understanding of the business
- cost of production incl. profits
- quantify farm-level antibiotic use

Inform design of RCTs to be conducted in 2023 / 2024

**Approach**

- A comprehensive survey tool collecting information on biosecurity, mortality, disease/health status, vaccinations, AMU, other inputs e.g., feed, cost of inputs, and outputs, i.e., sales and profit
  - Incl. perceptions on antimicrobials and compensation for participation in the RCT
  - Developed drug and feed booklets
- Drug waste bin (collected used packages) - AMC quantification and classification
- Biological sampling - pathogens, resistome, antibiotic residues, mycotoxins (poultry feed)
WP4: Water

Modeling and monitoring of microbial pollution in watersheds

- Quantify relative contribution of livestock to pollution of water with *E. coli* and *Salmonella*
- *Ex ante* analysis of pollution control measures
- Assess health risk downstream
- Progress as of Feb 2023
  - Watersheds selected: Akaki in Ethiopia, Song in India
  - Partners and consultants engaged, staff recruited
  - Monitoring plan and stakeholder analysis developed
  - First monitoring campaign conducted in Akaki

Resource recovery and reuse (RRR) from animal waste

- Online survey disseminated for identification and pre-characterization of RRR cases. 60 cases identified. 5 characterized in detail
- Business models from successful cases will be synthesized and promoted for adoption and replication

Cross-initiative integration of water

- Contributing to food safety RCT protocols to include research questions on water
WP5: Impact of information on demand of safer food

- 6 rounds of surveillance data in 10 urban areas show unbranded maize flour is more likely to contain high levels of fungal toxin
- Randomized intervention: info + posters to low-income Nairobi households
- Revisit 2 months later: 50% of those who got info are consuming safer flour, vs. 33% of control group
Upcoming events

- One Health curriculum development with IUCEA in Naivasha, Kenya, 8-10 March
- Indian partner meetings and field visit, Delhi and UP, 13-16 March
- Closing food safety SafePORK Vietnam, 28-30 March
- Annual meeting and stakeholder meeting in Ethiopia, 24-26 April
- Expert Workshop on the future of AMR Policy, 24-25 April in Toronto
- One Planet Food System conference of MARD (Vietnam) and One Planet 24-27 April
- WOAH/OIE session general, Paris, 22-25 May in Paris
- International Food Protection Conference, Toronto, July 2023

Initiative ongoing activities:

- Risk mapping and zoonoses surveillance (Kenya)
- Characterize wildlife value chains (Cote d’Ivoire, Vietnam)
- Development of RCT on impact of reducing antimicrobial use (Kenya, Bangladesh)
- Development of a framework for gender responsiveness in AMR (Kenya)
- Development of a tool (with scales) to quantify levels of knowledge, appropriateness of attitudes or practices in AMR (Kenya)
- Food safety interventions in (Vietnam, Ethiopia)
- Water modelling in (India, Ethiopia)
- Slaughterhouse hygiene intervention (Kenya)
Linkages / synergies with other Initiatives

- SAPLING: Zoonoses, food safety, AMR
- LCSR: Zoonoses, manure management
- SHiFT: Animal-source foods, food safety
- Resilient Cities: Food safety in urban environment
- Plant Health: Food safety
- HER+: Gender integration
Challenges, opportunities and risk management

• Integration of innovations into national programs: lower scale than expected due to reoriented development priorities
• Slow government approval of research (Vietnam)

• Opportunities:
  • Wildlife-livestock interactions, health risks in value chains
  • Influencing national and regional One Health agenda
  • Inclusion of the environmental dimensions of AMR - new UNEP report "Bracing for superbugs"
  • Alignment with other One Heath programs at CGIAR and beyond
  • One Health funding opportunities with new calls (WB pandemic fund)