CGIAR Technical Reporting has been developed in alignment with the CGIAR Technical Reporting Arrangement. This Initiative report ("Type 1" report) constitutes part of the broader CGIAR Technical Report. Each CGIAR Research Initiative submits an annual "Type 1" report, which provides assurance on Initiative-level progress towards End of Initiative outcomes.

The CGIAR Technical Report comprises:

- Type 1 Initiative, Impact Platform, and Science Group Project (SGP) reports, with quality assured results reported by Initiatives, Platforms and SGPs available on the CGIAR Results Dashboard.
- The Type 3 Portfolio Performance and Project Coordination Practice Change report, which focuses on internal practice change.
- The Portfolio Narrative, which draws on the Type 1 and Type 3 reports, and the CGIAR Results Dashboard, to provide a broader view on Portfolio coherence, including results, partnerships, country and regional engagement, and synergies among the Portfolio’s constituent parts.

The CGIAR Annual Report is a comprehensive overview of CGIAR’s collective achievements, impact and strategic outlook, which draws significantly from the Technical Report products above. For 2023, the Annual Report and Technical Report will be presented online as an integrated product.

**Table of contents**

- Fact sheet and budget
- Progress on science and towards End of Initiative outcomes
- Work Package progress
- Key results
- Partnerships
- CGIAR Portfolio linkages
- Adaptive management
- Key result story

**CGIAR Technical Reporting 2023**

1. Fact sheet and budget
2. Progress on science and towards End of Initiative outcomes
3. Work Package progress
4. Key results
5. Partnerships
6. CGIAR Portfolio linkages
7. Adaptive management
8. Key result story

**CGIAR Annual Report**
Executive Summary

In 2023, the Initiative continued to build on its strong foundation of research and innovation to advance the One Health approach. Key highlights include:

- We published 38 peer-reviewed articles, surpassing the 25 articles published in 2022, with these contributions advancing our understanding of infectious disease risks and foodborne diseases at the interface of animals, humans, and the environment; the impact of climate change on health; factors influencing antimicrobial resistance (AMR) in livestock and aquaculture; the identification of promising avenues for intervention to mitigate the spread of AMR; and the evaluation of strategies to reduce Zoonotic diseases.

- We announced three new One Health zoonotic disease surveillance and AMR demonstration sites in India, Uganda, and Viet Nam. This brings the total of Innovation Demo Sites to 11. We are positioning innovations that have high innovation readiness for scaling through co-creation with local partners.

- We conducted action research to test and evaluate food hygiene behavioral change innovations at the slaughter and retail levels, which have potential to improve health and livelihoods.

- We continue to work with local authorities on food safety priorities. In Kenya, we have led the national effort to integrate food safety into the national education curriculum. In Viet Nam, we launched a globally important report with the World Bank on new directions for tackling food safety risks in the informal sector of developing countries.

- To build capacity in taking up Initiative innovations, we contributed to 13 training activities across various regions.

- We continued our efforts to advance international and national forums, advocating for investments in One Health and promoting the work of CGIAR within global One Health communities.

- Finally, researchers are actively engaging in international and national forums, advocating for investments in One Health and promoting the work of CGIAR within global One Health communities.

- At a higher level, the Initiative played a key role in informing policy by supporting the integration of the existing National Goosebumps Initiative into the existing National Initiative for Food Security in Ethiopia. These platforms bring together national stakeholders and partners in discussions to collaborate, coordinate, and communicate toward addressing national food safety priorities. We launched a globally important report with the World Bank on new directions for tackling food safety risks in the informal sector of developing countries. In Kenya, we have led the national effort to integrate food safety into the national education curriculum. In Viet Nam, we launched a globally important report with the World Bank on new directions for tackling food safety risks in the informal sector of developing countries.

- Goats in their boma in a livestock-keeping household in Oloitoktok, southern Kenya. Credit: ILRI/Eric Fèvre.
Policy makers at the national level allocate more resources (finances, personnel, facilities, etc.) for zoonoses surveillance, surveillance, and response.

Government and private sector partners support integration of ERM approaches for informal food business activities into regulatory systems.

Stakeholders and policymakers are informed of CGIAR evidence on the extent of antimicrobial use (AMU), and the economic and productivity impacts of lower and better targeted AMU in key production systems (poultry and aquaculture).

Role of water in the transmission of pathogens and AMR, and proposed solutions for waste and water management, are recognized in national One Health planning processes of at least 2 of 7 project countries (e.g., Ethiopia, India).

One Health policy planning processes in at least three of seven project countries (e.g., Bangladesh, India, Vietnam) take into account CGIAR evidence on gendered constraints and incentives of small- and medium-scale food system actors, tradeoffs across policy goals, and the magnitude and distribution of impacts.
Summary of progress against the theory of change

Progress by End of Initiative Outcome

EOIO 1: Policymakers at the national level allocate more resources (finances, personnel, facilities, etc.) for zoonoses sensitization, surveillance, and response.

EOIO 2: Government and private sector partners support integration of enabling, capacitating, and motivating (ECM) approach for informal food business operators into regulatory system.

EOIO 3: Stakeholders are informed of CGAR evidence on the extent of AMU, and the economic impacts of lower/better targeted AMU in key production systems.
WP1: Emerging and neglected zoonoses

1.1 Hotspot maps.

1.2 Molecular screening.

1.3 Integrated surveillance.

1.4 Slaughterhouse.

Work Package progress

WP1: Emerging and neglected zoonoses

Output

- Collation and analysis of emerging disease surveillance data in sub-Saharan Africa and Southeast Asia to generate hotspot maps for risk surveillance and control.
- Capacity building on the use of advanced molecular screening techniques for zoonotic pathogens, and efficient approaches for analyzing the data generated for early detection and response.
- Technical reports and case studies indicating added value of integrated surveillance and control of selected zoonotic diseases.
- Surveillance data from slaughterhouses in selected areas in Kenya demonstrating their improved participation in meat inspection activities.

Outcome

- Improved knowledge on emerging infectious disease and zoonoses among decision makers.
- Increased participation of private sector in zoonosis control.
- Existing contingency plans and decision support tools updated based on new knowledge generated by the project.
- Reduction in the incidence of zoonoses in animals, humans, and the environment.

Addressed in 2022

- WP1: Emerging and neglected zoonoses
- WP2: Antimicrobial resistance in livestock production systems
- WP3: Aquaculture and ecosystem health
- WP4: Risk-based surveillance and control of selected zoonotic diseases
- WP5: One Health policy processes
- WP6: Risk communications and monitoring systems
- WP7: Stakeholder engagement on One Health governance

Collaborative approaches across WP1-7 have led to the following improvements:

- Increased awareness and understanding of zoonotic diseases and antimicrobial resistance among stakeholders.
- Enhanced capacity for surveillance and early detection of emerging infectious diseases.
- Improved decision-making and response strategies for zoonotic diseases and AMR.
- Strengthened engagement of key stakeholders, particularly private sector, in zoonotic disease control.
- Development of integrated surveillance and communication models for effective risk management.
WP2: Food safety

### 2.1 Food safety risks
- # evidence of AMU, drivers of AMU in poultry farms
- # abundance of AMR genes
- # high level of resistance to antibiotics
- # extent of AMU, and the economic and production impacts of AMU

### 2.2 Food safety in informal markets
- # evidence of AMU and targeted AMU in key production systems
- # evidence of AMU in wildlife

WP3: AMR

### 3.1 Feed quality
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry

### 3.2 Antibiotic quality
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry

### 3.3 AMU governance
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry

### 3.4 AMU supply chain
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry

### 3.5 Veterinary antibiotic supply chain
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry

### 3.6 AMU in wildlife
- # evidence of AMU, and the extent of antibiofilmic use
- # impact of AMU on productivity and performance of poultry
WP4: Water

4.1 Characterization and modelling.

4.2 Water safety risks.

4.3 Business models.

WP5: Economics, governance, and behavior

5.1 Cost-effectiveness and public/private benefits.

5.2 Food safety rating business impact.

5.3 Capacity and incentives for food safety.

5.4 Relative food risk and consumer behavior.
### Work Package progress rating summary

<table>
<thead>
<tr>
<th>WORK PACKAGE</th>
<th>PROGRESS RATING &amp; RATIONALE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong></td>
<td><img src="image" alt="Progress rating" /> 1. Most of the activities have commenced although more time was used initially to develop the required tools and research compliance certificates.</td>
</tr>
<tr>
<td><strong>2</strong></td>
<td><img src="image" alt="Progress rating" /> 2. We are on track to deliver outputs that will contribute to WP and Initiative outcomes by the end of 2024.</td>
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<tr>
<td><strong>3</strong></td>
<td><img src="image" alt="Progress rating" /> 3. We are on track to deliver outputs that will contribute to WP and Initiative outcomes by the end of 2024.</td>
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</tr>
<tr>
<td><strong>5</strong></td>
<td><img src="image" alt="Progress rating" /> 5. We are on track to deliver outputs that will contribute to WP and Initiative outcomes by the end of 2024.</td>
</tr>
</tbody>
</table>

#### Definitions

- **On track**: Annual progress largely aligns with Plan of Results and Budget and Work Package theory of change.
- **Delayed**: Can include small deviations/issues/delays/risks that do not jeopardize success of Work Package.
- **Off track**: Annual progress clearly falls behind Plan of Results and Budget and Work Package theory of change in most/all areas. Deviations/issues/delays/risks do jeopardize success of Work Package if not managed appropriately.
Key results

Overview of reported results

Outcomes
- Policy change: 52
- Innovation development: 16
- Capacity sharing for development: 15

Percentage of reported results tagged to CGIAR Impact Areas

- Nutrition, health and food security: 20%
- Poverty reduction, livelihoods and Jobs: 10%
- Gender equality, youth and social inclusion: 11%
- Climate adaptation and mitigation: 4%
- Environmental health and biodiversity: 6%
- Innovation development: 1%
- Knowledge products: 7%
- Other outcome: 20%
- Principal: 82%
- Significant: 90%
- Not targeted: 18%

Knowledge products by type

- Journal Article: 52
- Other: 0
- Working Paper: 0
- Blog Post: 0
- Brief: 0
- Report: 0

Open access knowledge products

- Yes: 52
- No: 0

Results by country

Contributing Centers

- WorldFish: 5
- IFPRI: 4
- IWMI: 6
- ILRI: 18
- One Health: 17
Partnerships and One Health’s impact pathways

In Ethiopia, we partnered with the Ethiopian National One Health Steering Committee to develop a new TWG on food safety. Our Initiative continues to partner with Addis Ababa University and the Addis Ababa Water and Sewerage Authority and to increase capacities in the monitoring of waterborne pathogens to better understand pollution sources and microbial hazards in the watershed for more targeted remedial actions.

In western Kenya, we have engaged officials in five county governments to discuss the gaps between the regulations governing slaughterhouse hygiene and practice. We also engaged meat inspectors in the delivery of an intervention to close this gap. This type of engagement with government entities throughout the research process is expected to generate ownership of the evidence we produce and to increase the likelihood of its application to policy.

In Viet Nam, we have developed strong partnerships with the National Institute for Veterinary Research and Hanoi University of Public Health to conduct risk-based prioritization, implementation, and evaluation of interventions and integration of research outputs into government policies and programs. In particular, we work closely with five provincial departments of animal health to implement food safety intervention, AMR, and wildlife risk projects. We worked with Vietnamese One Health institutions to integrate the national food safety working group into the Viet Nam One Health Partnership to engage more government partners in food safety discussion.

As in Viet Nam, a contract was developed between the International Livestock Research Institute (ILRI) and Centre Suisse de Recherches Scientifique in Côte d’Ivoire to work on wildlife projects.

In India, the project is partnering with ICAR Indian Veterinary Research Institute, Institutes of Technology in Roorkee and Delhi, and BAIF Development Research Foundation, which have strong networks with researchers, policymakers, and local communities in the country.

We are also working closely with private sector partners. In Kenya, a mobile phone surveillance system is being developed in partnership with a private information and community technology company called Badili Innovations. The University of Liverpool is also a key partner involved in the implementation of the integrated One Health surveillance and control measures for zoonotic diseases in Kajiado County in Kenya.

Finally, we are continuing high-level engagements and partnerships, for example, through co-chairing of the Quadripartite Technical Group on Antimicrobial Resistance and Use Integrated Surveillance and membership in the WHO Scientific Advisory Group for the Origins of Novel Pathogens.
CGIAR Portfolio linkages

Section 6: CGIAR Portfolio linkages

'One Health's internal portfolio network

Connections are sized by the number of reported results.

WP1. Several bilateral projects implemented at ILRI support One Health capacity development in the same countries selected for WP1. Projects such as the One Health Centre in Africa and Boosting Uganda's Investment in Livestock Development are also supporting One Health interventions to address multiple different zoonoses risks.

WP2. Several bilateral food safety projects across Asia and Africa focus on the assessment of health and economic risks of foodborne diseases in traditional markets. For example, the Agroecology and Safe Food Systems Transitions project is developing interventions in markets and slaughterhouses to reduce these risks by engaging consumers and government stakeholders.

WP3. AMR partnerships formed from the CGIAR AMR Hub continues with the same four CGIAR Centers in this Initiative. We are leveraging knowledge and networks from ongoing bilateral projects to inform Initiative activities. Similarly, we are using approaches of the Initiative for other bilateral projects (such as drug bin survey tool in Malawi and Uganda).

WP4. The work on business models on resource recovery and reuse (RRR) of animal waste builds on a larger program from IWMI on RRR from fecal sludge and municipal wastewater. The work on modeling zoonotic pathogens and AMR in watersheds builds upon work of the CGIAR AMR hub.

WP5. The International Food Policy Research Institute is testing the impact of a voluntary food safety surveillance with informal groundnut processors in Ghana, through a project funded by the United States Agency for International Development Feed the Future Peanut Innovation Lab. This model is similar to the food safety upgrading approach being tested among traditional meat vendors in Vietnam and Ethiopia.

We also collaborated with other CGIAR Research Initiatives. We contributed a piece on microbial contamination and AMR in marketed food with Resilient Cities. We worked with Sustainable Animal Productivity for Livelihoods, Nutrition and Gender Inclusion (SAPLING) on a gender-One Health framework (output forthcoming in 2024). Together with the Livestock and Climate Initiative and SAPLING, we are developing an innovation titled "Community-designed One Health Units as a Model for Integrated Human, Animal, and Environmental Health Service Delivery to Pastoralists in the Horn of Africa."

Section 7: Adaptive management

RECOMMENDATION | SUPPORTING RATIONALE
---|---
1. Continue to track progress against planned deliverables by WP | Last year we reviewed resource allocations for our deliverables, which we will continue to do. We will also continue to evaluate and improve the process taken to achieve our deliverables.
2. Continue advocacy work | We will continue efforts to promote the use of research findings to achieve intended impacts.
3. Continue external communication efforts | In the past year, we developed a microsite. This year we will continue to enhance the visibility of our work to further our impact, for example, by publishing key result stories throughout the year. Furthermore, we will continue to present at high-level conferences and events.
4. Synthesize work conducted in different countries and WPs | In the past year we have made efforts to integrate work across WPs for enhanced collective impact. This year, we will focus on dissemination by synthesizing work by countries and WPs.
5. Expand relationships with scaling partners | We are identifying and securing partnerships with private sector partners to enhance the spread of our interventions.
6. Expand relationships with demand partners | We are engaging with United Nations agencies (such as UNEP, FAO), CGIAR Research Initiatives (such as Sustainable Animal Productivity, Livestock and Climate, Resilient Cities), other international and national organizations (such as CABI), and governments of project countries at all levels to promote continuity of this work.
7. Address cross-cutting themes (gender, climate change) | We will continue to integrate key cross-cutting themes across our workstreams.
Key result story

One Health coordination in food safety in Viet Nam and Ethiopia toward enhanced health and livelihoods

Food safety working groups are improving collaboration between researchers and policymakers in Viet Nam and Ethiopia.

Since 2015, collaborations with scientists and development partners in Viet Nam have influenced national policies and benefited food business operators and communities. Efforts in Viet Nam and Ethiopia to follow—driving policy development, tackling food safety issues, and setting examples for impactful research-for-development, promoting global health and economic progress.

The CGIAR Research Initiatives on One Health and Resilient Cities have led food safety groups in Viet Nam and Ethiopia, improving health and livelihoods. Since 2015, collaborations with scientists and development partners in Viet Nam have influenced national policies and benefited food business operators and communities. Efforts in Viet Nam and Ethiopia to follow—driving policy development, tackling food safety issues, and setting examples for impactful research-for-development, promoting global health and economic progress.

The inherent complexity of food safety management in LMICs, as Kebede Amenu, an ILRI postdoctoral scientist in Ethiopia, remarks, “The multisectoral makeup of the FSTWG, with representatives from various fields, exemplifies a holistic approach to tackling complex issues. They stand not just as groups but as a unified front for change, reflecting the growing need for such models in LMICs that seek to turn the tide on food safety and health.”

Since 2015, researchers from ILRI have upheld a dedicated commitment to supporting the FSTWG in Viet Nam, showcasing the power of persistent advocacy, embedding food safety into national priorities. In Ethiopia, the establishment of the FSTWG marks the beginning of a robust, demand-driven initiative aimed at enhancing food safety standards in response to current needs while also ensuring long-term sustainability.
Typical mixed crop-livestock farming homestead in western Kenya.

Credit: ILRI/Charlie Pye-Smith

Surveillance activities in animals and humans at markets and linked slaughterhouses is an efficient means by which we can capture certain elements of the community.

Credit: ILRI/Eric Fèvre