Inception workshop report

Poultry losses and One Health: Reducing losses and zoonotic risks along the poultry value chain through a One Health approach

Valérie Raymonde Lallogo, Guy Ilboudo and Michel Dione

September 2022
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ILRI thanks all donors and organizations which globally support its work through their contributions to the CGIAR Trust Fund

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Citation

The workshop organized by the International Livestock Research Institute in collaboration with University Joseph Ki-Zerbo of Ouagadougou, University of Florida, the Environmental and Agricultural Research Institute (INERA) and Kyeema Foundation and held at the Hotel Sopatel Silmande, Ouagadougou, Burkina Faso, 8 September 2022

Disclaimer
This work was funded in whole or part by the United States Agency for International Development (USAID) Bureau for Food Security under Agreement # AID-OAA-L-15-00003 as part of Feed the Future Innovation Lab for Livestock Systems. Any opinions, findings, conclusions, or recommendations expressed here are recommendations expressed here are those of the authors alone.
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List of abbreviations

AHH  Animal and Human Health
AE   Agent Technique
CN   Centre Nord
SCOOP Cooperative Societies
CIRAD Centre de coopération Internationale en Recherche Agronomique pour le Développement
CPAVI Centre de Promotion de l'Aviculture Villageoise
DRMAAH-CN Direction Régionale Ministere de l'Agriculture et des Aménagements Hydrauliques -North Centre
ILRI International Livestock Research Institute
INERA Institut National d'Environnement et de Recherche Agricole
IRSAT Institute for Research in Applied Sciences and Technologies
IPVL Interprofession Volaille Locale
IET Integrated Educational and Training
LCD Local Capacity Development
LSIL-BF Innovation Lab for Livestock Systems – Burkina Faso
MAAH Ministère de l'Agriculture et des Aménagements Hydrauliques (MAAH)
OH One Health
OHRECA One Health Research, Education and Outreach Centre in Africa
PADEL-B Projet de Développement de l'Elevage du Burkina Faso
PMSP Poultry Multi Stakeholder Platform
POLOH Poultry Losses and One Health
PPP Public Private Partnership
ToT Training of Trainers
UJKZ University Joseph Ki-Zerbo
UoF University of Florida
VVV Vulgarisateurs Volontaires Villageois
Meeting objectives
The objectives of the workshop were to:

- gain more insights from stakeholders about the current situation of the local poultry sector in the North Centre (CN) including constraints and opportunities;
- together with stakeholders, validate the different innovations of the project and identify other priority areas for intervention to upgrade the poultry value chain;
- present and discuss synergies between the project and projects in the poultry value chain including Push Pull Urban food markets in Africa project: Incentivizing food safety using a pull-push approach (Pull Push project);
- discuss the planning of activities for year; and
- explore further collaboration with potential partners and stakeholders who were not involved in the proposal development.

Background information
Village poultry farming is a convenient animal production system for poor communities, widespread in most countries in Africa and Asia. Village poultry are often very well classified as an existing resource where productivity can be increased with modest additional inputs to the farm. In rural areas, poultry is usually owned and managed by women and children and is often essential for female-headed household incomes. In Burkina Faso, village poultry farming is an important part of livelihood, food and strengthening social ties. In addition, the growing demand for local poultry in urban and export markets in Burkina Faso has led to an increase in poultry production activity, particularly in peri-urban areas and along major roads. However, the increase in the poultry population as a result of the high demand is not accompanied by a profound transformation of the production system. Many shortcomings remain in the production practices, conditions of transport, processing and marketing of local poultry. Therefore, improving poultry management, rearing and hygiene practices can ensure and improve the livelihoods of smallholders by increasing production for sale and self-consumption. Also, improving the farm environment and livestock diet could contribute to reducing exposure to foodborne pathogens thus improving human health. The International Livestock Research Institute (ILRI) in collaboration with several other national and international partners initiated the Poultry losses and One Health (POLOH) project, which aims to reduce economic losses and the transmission of zoonoses in rural communities through "One Health" interventions at the level of each farm and transport nodes of the value chains.

Presentations and discussions
Opening remarks
The presidium of the ceremony brought together Dr. Gnanda Isidore (Institut National d’Environnement et de Recherche Agricole - INRERA - coordinator of the Innovation Lab for Livestock Systems in Burkina Faso), Dr. Seydou Ouattara (Ministère de l’Agriculture et des Aménagements Hydrauliques (MAAH) - Director of the Centre de Promotion de l’Aviculture Villageoise - CEPAVI) and Dr. Hung Nguyen (Animal and Human Health program- AHH co-leader at ILRI). The introductory speech was addressed by Dr. Gnanda Isidore; after the usual greetings, he made a brief presentation of the LSIL-BF and its various actions, then explained the context which prevailed for the financing of this present project. The co-leader of the AHH program of ILRI then congratulated this initiative and welcomed the presence of the participants. Dr. Ouattara welcomed this project as the representative of the MAAH through CEPAVI whose essential mission is to
promote village poultry farming. While wishing participants a fruitful day of work with relevant results, officially he declared the opening of the POLOH project launch workshop. The official opening speech was then followed by several communications.

**Presentation of the POLOH project**

The first communication was made by the principal investigator Michel Dione on the POLOH project. The main objective of the project is to strengthen household food security and improve the livelihoods of small-scale poultry producers by reducing economic losses and zoonotic risks throughout the value chain, by developing OH (One Health) interventions in the north-central region, precisely in the commune of Boussouma. The project has set itself five objectives to be achieved, namely:

- Assessing knowledge, attitudes, and practices of smallholder poultry producers and other connected value chain actors
- Assessing the distribution and characterizing the key chicken associated zoonotic pathogens (Salmonella spp. and Campylobacter spp.) and assessing intervention effects and gendered impacts of farm and market-level practices on productivity, food safety, and animal welfare through modeling approaches, laboratory surveys, and field evaluation
- Developing and testing appropriate Integrated Educational and Training packages using a holistic approach
- Identifying and testing likely gender-sensitive business models for enhancing value linkages, including inputs, delivery of veterinary products (such as deworming, effective vaccination and training), and advisory services through public-private partnerships and including community vaccinators
- Building the capacity of next-generation youth national researchers on poultry health and food safety research using a OH approach and improve networking and collaboration among value chain stakeholders.

The project targets four innovations

- Integrated Educational and Training (IET) packages using a One Health approach
- Gender-sensitive business models through a public-private partnership (PPP) to improve productivity and safeguarded human health
- Build capacity of next generation national researchers and academia on poultry health and food safety research using a OH approach.
- Create a Poultry Multi Stakeholder Platform (PMSP) for advocacy and communication

**Presentation of the local poultry sector in the Center North region**

The representative of the DRMAAH-CN presented the constraints and opportunities for poultry farming in the CN region. Producers are organised into cooperative societies (SCOOP) supported by the poultry interprofession which bring together traders and processors.

**Constraints**

- Lack of feed following the rise in cereal prices on the market;
- Insufficient veterinary service coverage due to the reduced number of animal health workers;
- Lack of technical skills of actors (especially producers) on best practices of poultry farming;
- The persistence of poultry diseases;
- Poor housing;
- Difficulty of actors in accessing micro-credit finances;
- Constraints related to the insecurity situation.
Opportunities

- The poultry production cycle is short (less than a year, possibility of having two production cycles per year);
- The initial investment is low;
- The demands in time and labour are low (about 1 hour per day);
- The flow of products (chicks, adult poultry, eggs, manure) is easy;
- The demand for meat of village chicken is high;
- Makes it possible to fight against unemployment in the sense that it is a real source of job creation with a number of actors involved along the value chains;
- There is political will to boost the poultry sector.

Recommendations

To boost the poultry sector in the CN region, the following recommendations were suggested:

- Build capacity of producers (example the creation of demonstration units/model farms).
- Strengthen the capacity of extension agents and support stakeholders;
- Facilitate the access of actors to financial loans;
- Train actors of the processing node on best hygiene practices;
- Train actors on management and marketing;
- Involve all stakeholders in the consultation process in decision making to develop the poultry sector.

Presentation on the prevalence of Salmonella and Campylobacter along the chicken value chain in Burkina Faso

Assèta Kagambèga, researcher of Université Joseph Ki-Zerbo (UJKZ) made a review of the prevalence of Salmonella and Campylobacter in chicken samples in Burkina. The results of this study indicated that the prevalence of Salmonella on chicken carcasses sold in Ouagadougou markets ranged from 37% to 90% in the dry season and up to 57% in the wet season, while the prevalence of Campylobacter was estimated at 50% on chicken carcasses. Research gaps that have been identified in these past studies include absence of a OH approach in the investigation of food hazards, the lack of data on pathogens along the entire chicken value chain, the lack of proper assessment of health outcomes after training interventions of actors.

Presentation of the Pull-Push project

The Pull-Push project was presented by Theodore Knight-Jones, researcher at ILRI. The objective of this project is incentivizing food safety in urban food markets in Africa using the Pull-Push approach. The results of this project reveal many food safety challenges in chicken markets, but also massive and preventable production losses. Many of the issues in the farm-to-fork value chain have resulted in both loss of chicken production and human health risks, and impact animal welfare. The Pull-Push project provided basic information for detailed intervention in planning of the POLOH project. There is strong connection between this project and POLOH given their different focuses which make them complementary.

Group work feedback

The oral presentations were followed by group work. The participants were divided into four groups.

The first group discussed the sustainable model for delivering of veterinary inputs — with focus on vaccination and biosecurity on farm. The following recommendations were given to the project:

- Take stock of the potential in terms of human capacity for vaccination;
- Establish the distribution circuit of vaccines from firms, through importers to village volunteer extension;
- Identify the main difficulties about biosecurity for better management in perspective.
The **second** group reflected on capacity building/training. Participants recognised huge gaps in capacity of actors in the poultry sector and proposed several training themes targeting producers, extension and other value chain actors. The main themes proposed for the trainings were:

- **At production node**: modern production techniques, health and hygiene, integration of the OH approach
- **At transport and marketing nodes**: improvement of transport and marketing
- **At processing nodes**: best practices in slaughtering and preparation.
- **For extension**: good practices in cold chain management

The **third** group reflected on how to better integrate women in the poultry sector—focus on OH. For better integration of women, these six points would be considered as necessary:

- Facilitate women’s access to infrastructure and production inputs through
  - creation of cooperatives
  - training on livestock management
- Facilitate women’s access to financing (micro-credits) through
  - creation of poultry cooperatives made up of women (solidarity credits)
  - advocacy with partners to obtain guarantee funds
- Develop productive alliances to facilitate the flow of production (organization) through
  - signature of business contracts between the links of the poultry value chain
- Empower women through
  - improvement of management of production units
  - training in good hygiene and biosecurity practices (manure pits for composting)
  - training in technical and financial management
- Train women on meat processing techniques
  - drying, smoking, roasting, packaging
- Sensitize men on the merits of empowering women in production activities such as leadership, women’s participation in meeting household needs (schooling, health, food)

The **fourth** group, reflected on the establishment and operationalization of a Poultry Multi-Stakeholder Platform (PMSp) in the CN. They made the following suggestions:

- Make an inventory of the existing platforms
- Identify actors (who can be a member of the platform)
- Build capacity of actors
- Make a diagnosis of the problems (prioritization) and propose solutions
- Identify activities to be carried out within the framework of the OH
- Identify human and financial resources
- Set results to be achieved
- Identify measurable indicators
- Collaborate with the various structures in connection with the sector

Further discussions were made on how to better involve policy makers to accelerate the uptake of the results of the research; and a discussion was made on the Local Capacity Development (LCD) plans. For this session, the participants were divided into two focus groups.

**Group 1**: on policy
Participant suggested involving decision makers through the project implementation, more specifically at three stages of the project.

- **When starting the project**
  - Invite the authorities to the launch of the project
  - Explain the objectives of the project to political decision-makers
- At midline
  - Mid-term results sharing workshops (central, regional, and local level) and discuss difficulties.
  - Identify the implementation gaps if there are any
  - Develop a plan to tackle the gaps
- At the end of the project
  - Organize workshops to share project results
  - Develop briefs for decision-makers
  - Feedback to all project stakeholders

**Group 2: on LCD**
The participants recognized the need to build capacity of young generation in poultry health and OH. They suggested that the project should offer short-term online or face-to-face training modules targeting different profiles.
- Professionals – technical wings of the government
- Academic/research
- Student/ MSc, PhD

The key topics of the training should target (but not limited): antimicrobial resistance, biosafety, zoonoses, good practices in the value chain, gender approach, pesticide use, leadership and communication and OH approach evaluation

**General discussions**
The plenary session allowed participants to exchange and make comments on outputs form group work. Additional recommendations to the project included:
- Better enforcement of the regulation on the quality of vaccines (specially by maintaining a cold chain) to avoid informal channels of vaccine supply. This will ensure good quality vaccine to the farmers, thus improve vaccination efficacy;
- Strong involvement of the public sectors (through CPAVI) and private sector actors in a form of a public-private partnership in the project implementation to increase the chances of success and ensure sustainability.
- The integration of a module on One Health (OH) approach in the training manuals
- Capacity building of stakeholders including decision makers on how to operationalize OH approach was seen as critical, given that there is a gap in this area;
- The integration of a module on the gender approach in the training manual to producers;
- It was mentioned that the issues related to the use of antimicrobials and antimicrobial resistance should be considered;
- Training/capacity building should not only target producer, buy also other actors of the value chains especially the inputs suppliers.
- There are already existing training modules developed by CPAVI for the entire poultry sector in Burkina Faso. Participants pointed out the important of avoiding duplication and suggest that POLOH should only fill gaps in biosecurity and OH.
- The duration and content of the modules must be adapted to the needs of the target
- Including community leaders among decision-makers
- Set up an OH award for actors in the field.
- Setting up a local committee made on veterinary, human health and environment to implement OH during the project implementation
Participants

The participants comprised national and international researchers, private sector, farmers cooperatives, veterinarians, poultry value chain actors, extension, government staff and development organizations.

Action points and next steps

– The project team will carry out a scoping visit in October to the site and discuss collaboration with on-site partners and how activities will be implemented;
– Various potential additional collaborators to the project will be contacted for further discussions on opportunities to work together;
– All recommendation by stakeholders will be reviewed and considered by the project team.
### Appendix 1: Agenda

<table>
<thead>
<tr>
<th>Hours</th>
<th>Activity</th>
<th>Responsible</th>
</tr>
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<tbody>
<tr>
<td>8h30-9h00</td>
<td>Welcome and installation</td>
<td>Isidore Gnanda (INERA)</td>
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<tr>
<td>9h00-9h05</td>
<td>Speech by the LSIL-BF coordinator</td>
<td>Isidore Gnanda (INERA)</td>
</tr>
<tr>
<td>9h05-9h10</td>
<td>Speech by ILRI</td>
<td>Hung Nguyen (ILRI)</td>
</tr>
<tr>
<td>9h10-9h30</td>
<td>Speech by the MAAH</td>
<td>Seydou Ouatara (CPAVI)</td>
</tr>
<tr>
<td>9h30-10h</td>
<td>Presentation of the local poultry sector in the CN (constraints and opportunities)</td>
<td>Adama Ouedraogo (DRMAAH-CN)</td>
</tr>
<tr>
<td>10h-10h15</td>
<td>Prevalence of <em>Campylobacter</em> and <em>Salmonella</em> along the chicken value chain in Burkina Faso: implications for public health</td>
<td>Assèta Kagambèga (UJKO)</td>
</tr>
<tr>
<td>10h15-10h30</td>
<td>Presentation of Push Pull project Urban Food Markets in Africa: Incentivizing Food Safety using a Pull-Push Approach</td>
<td>Theodore Knight-Jones (ILRI)</td>
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<tr>
<td>10h30-11h00</td>
<td>Coffee break</td>
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<tr>
<td>11h00-12h00</td>
<td>Group work</td>
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<td></td>
<td>G 1: Sustainable model for the delivery of veterinary services – vaccination and on-farm biosecurity</td>
<td>CPAVI</td>
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<td></td>
<td>G 2: Capacity building/training – Gaps in capacity building for poultry sector actors</td>
<td>Assèta Kagambèga- UJKZ and Ganser &amp; Claudia (UoF)</td>
</tr>
<tr>
<td></td>
<td>G 3: How to better integrate women into the poultry sector – focus on One Health</td>
<td>Sidonie Ima (INERA)</td>
</tr>
<tr>
<td></td>
<td>G 4: How to set up and operationalize an innovation platform for the poultry sector in the CN?</td>
<td>Brahima Sow (MAAH-CN)</td>
</tr>
<tr>
<td>12h00-13h00</td>
<td>Plenary session: Presentation of group work</td>
<td>Gnanda Isidore (INERA)</td>
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<tr>
<td>13h-14h</td>
<td>Lunch break</td>
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<td></td>
<td>G 1: Development of Local Capacity Building Plans (LCDs)</td>
<td>Assèta Kagambèga- UJKZ and Ganser &amp; Claudia (UoF)</td>
</tr>
<tr>
<td></td>
<td>G2: Plans/strategy for the development of the One Health and Biosecurity training module</td>
<td>CPAVI</td>
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<td></td>
<td>G3: Approach to better integrate policymakers in the uptake of POLOH research results</td>
<td>DSV</td>
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<tr>
<td>15h-15h30</td>
<td>Plenary session: Presentation of group work</td>
<td>Ilboudo Guy (ILRI)</td>
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<tr>
<td>15h30-16h00</td>
<td>Next steps and End</td>
<td>Michel Dione (ILRI) and Hung Nguyen (ILRI)</td>
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</tbody>
</table>
Appendix 2: Photographs

Photo 1: Group work during the workshop discussing local capacity development plans

Photo 2: Group work during the workshop discussing delivery of veterinary inputs such as vaccination
Photo 3: Group work during the workshop discussing how to better integrate women in the poultry value chain

Photo 4: Group work during the workshop discussing how to operationalize the innovation platforms
Photo 5: Visit of POLOH research team to the microbiology laboratory of Prof. Asseta Kagambèga (Co-PI) at the University of Ouagadougou
### Appendix 3: List of participants

<table>
<thead>
<tr>
<th>Name</th>
<th>Organization</th>
<th>M/F</th>
<th>Type of institution</th>
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<tbody>
<tr>
<td>Ahmadou N SOW</td>
<td>ILRI</td>
<td>Male</td>
<td>CG-Research</td>
</tr>
<tr>
<td>S Desire NANA</td>
<td>CIRAD</td>
<td>Male</td>
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<tr>
<td>S Guy ILBOUDO</td>
<td>ILRI</td>
<td>Male</td>
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<tr>
<td>Abdou Kader ILBOUDO</td>
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<tr>
<td>Geoffrey NJENGA</td>
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<tr>
<td>Madi SAVADOGO</td>
<td>IRSS</td>
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<td>Sidonie OUOBA IMA</td>
<td>INERA</td>
<td>Female</td>
<td>Non-CG-Research</td>
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<tr>
<td>Valerie LALLOGO NR</td>
<td>ILRI</td>
<td>Female</td>
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<tr>
<td>Abel BIGUEZOTON</td>
<td>CIRDES</td>
<td>Male</td>
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<tr>
<td>Charles MANDE</td>
<td>ONV-BF</td>
<td>Male</td>
<td>Private sector</td>
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<tr>
<td>Bernadette YOUGBARE</td>
<td>INERA</td>
<td>Female</td>
<td>Non-CG-Research</td>
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<tr>
<td>Natacha GOUBA/OUEDRAOGO</td>
<td>World Vegetable Centre</td>
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<td>Bernard BETT</td>
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<td>Asseta BOUGMA/KAGAMBEGA</td>
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<td>Female</td>
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<td>TOE B Alida N</td>
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<td>Michel DIONE</td>
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<td>Hung NGUYEN</td>
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<td>Theodore KNIGHT-JONES</td>
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<td>Claudia GANSER</td>
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<td>N Thomas OUEDRAOGO</td>
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<td>Idrissa OUEDRAOGO</td>
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<td>Olivier SAWADOGO</td>
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<td>Boureima SAWADOGO</td>
<td>IPVL</td>
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<td>Jocelyne BOUNTOULOUGOU</td>
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<td>Yacouba DRABO</td>
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