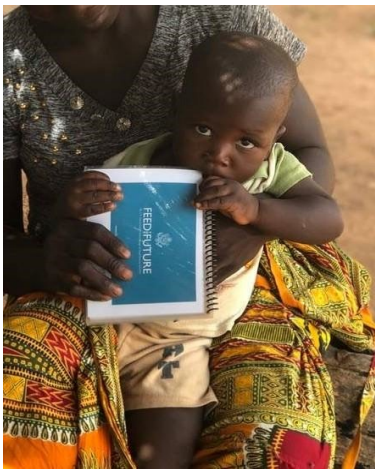
Burkina Faso: Success Stories

Mothers see healthier children in the "One Egg Per Day" project in Burkina Faso



"Bicycle chicken" is a national dish in Burkina Faso, and even Bill Gates shared a video about it and blogged that chicken rearing can reduce extreme poverty (https://www.gatesnotes.com/Development/Why-I-Would-Raise-Chickens). But what about the eggs?

Recent research in Burkina Faso, sponsored by the Feed the Future Innovation Lab for Livestock Systems, has found that educating mothers about the benefits of eggs can change the diets they feed their children in ways that produce rapid, significant improvement in nutritional status.

The change in behavior was profound. Before this research-based intervention, young children in 18 rural villages in Kaya District rarely ate eggs. Within four months, some children were eating an egg a day, and their mothers were impressed with the results. Problems with wasting and underweight both dropped significantly in less than a year.

National television news covered the phenomenon in the summer of 2019, and one mother explained the process and its impact: "Eggs are valuable and we are now aware of it. Each of us received 3 chickens, and we the parents had to contribute one chicken so that we have sufficient production of eggs for the child's nutrition. We have seen the importance of eggs for children, and they make the child more intelligent," said Lea Ouedraogo in the broadcast (translated from French).

The mothers told the researchers that they were seeing improvements in their children's resilience and psychomotor functioning. The leader of the research project, Dr. Sarah McKune from the University of Florida, heard them say that "'our kids aren't getting sick. Something's different about these kids.'"

A study participant describes the benefits in a nationally televised news segment. (credit: Burkina Faso TV)

Justification and Methods

The idea to pursue this research and dietary intervention germinated from discussions at an Innovation Platform meeting with stakeholders in Burkina Faso. Certainly, eggs are available, but rural people prefer to sell chickens and their eggs to gain income. Would poverty prevent them from changing their behavior? A prior pilot study in Ethiopia provided hope, and the leader of that study, Anteneh Omer of Hawassa University, joined Dr. McKune as a co-Principal Investigator. The other co-Principal Investigator was Dr. Aissata Wereme from the Institute of Environment and Agricultural Research (INERA-Burkina Faso).

To study the effects of an educational campaign, the project divided mothers into three groups of about 90 women each. One group served as a control, while the other two groups received training every two weeks about chicken husbandry and the importance of eggs for children under the age of two.

A trainer uses a flipbook to advise a mother about chicken husbandry.

The third, full intervention group received three chickens in a ceremony led by a village leader. Participating mothers pledged to obtain an additional hen and to feed their child one egg daily. This group showed the greatest behavioral change, with nearly all children consistently eating an egg daily. Across the control, partial, and full study arms, mother-reported child egg consumption changed from nearly 0 to 1.0, 2.4, and 6.3 eggs per week, respectively.

This change may bring many benefits. An intervention in Ecuador in 2017 showed that it may nearly halve rates of stunting. The study in Burkina Faso is investigating such effects, and it has received an additional grant from the Livestock Systems Innovation Lab to expand its research into cognitive development.

Why did it work?

Instead of a single factor, McKune cites the project's multi-pronged approach as a recipe for success. Messages were consistent, and a childproof, laminated flipbook used culturally relevant graphics to educate non-literate participants. She credits colleague Omer with fostering camaraderie among the project's nearly 270 participants, and his approach included creating a jingle in the local language that they sang to inaugurate meetings: "One Child, One Egg, Per Day."

The simplicity of the approach was another plus. "It feels so accessible, so doable. This is very low tech," said McKune.

In addition to poultry production, the project targeted women's empowerment as an essential ingredient. The trained women demonstrated it at the project's closing event on May 28, 2019, when they trained the women in the control group on how to boil eggs and feed their children properly.

All participants expressed eagerness to continue sharing what they had learned. With the additional grant, the researchers can continue studying the process and effects of behavioral and dietary change.

Next, the researchers will speak in November 2019 at the American Public Health Association meeting in Philadelphia. There is also interest to conduct the intervention in Niger and Rwanda.

Overcoming Chicken Challenges through Effective Coordination

The Burkinabe poultry sector can become safer and more productive by improved farm and market practices. This is not easy and does not happen overnight. However, this challenge does not stop a dedicated team of researchers under the leadership of Dr. Michel Dione from the International Livestock Research Institute (ILRI) from taking on this challenge. In collaboration with many partner organizations including government officials at various levels as well as the National Poultry Promotion Center (CPAVI), producer organizations and researchers, the team implements the Poultry Losses and One Health (POLOH) project in Burkina Faso to address this challenge.

Figure 1 Local rooster in peri-urban Ouagadougou, Burkina Faso (Photo credit: M.Dione)

In FY 2023, 211 stakeholders (including 64 female) were engaged through project workshop launches at central and local levels, site scoping, intervention design, data collection and intervention validation workshops. This co-creation process allowed for the project team to adapt the planned project activities to be more locally driven, ensuring more buy-in from all involved. These interactive sessions built on findings from qualitative research that targeted 240 poultry producers (160 female and 80 male) as well as findings from a quantitative baseline survey targeting 350 chicken-producing households in 23 villages. Indicators targeted during the baseline survey were economic indicators, production indices, chicken consumption practices (meat and eggs), hygiene practices, self-reported health and family health.

These many and very interactive and lively engagements allowed the team to ground truth some of their assumptions. Solutions "known" by experts were not common knowledge among other stakeholders, particularly women that constitute an important part of the poultry sector in Burkina Faso. Through these stakeholder engagements and capacity building activities, the project has raised awareness among stakeholders and technical partners on the importance of considering the One Health approach in dealing with issues along the poultry value chain.

Ten One Health Poultry Champions selected from various institutions are engaged with the project team and partners to co-create innovative Integrated Educational and Training packages using a holistic approach that promotes hygiene practices, biosecurity, improved management, poultry health and welfare, and production of high-quality poultry products. Rather than developing something entirely new, the project worked with CPAVI to improve and complement their existing training manuals (with topics related to One Health) which are already widely used throughout the country. The roll out of the training courses and the related vaccination of poultry will take place in the next fiscal year.

Apart from linkages at the national level, the project team also benefitted from other ongoing research ILRI-led initiatives in Burkina Faso such as *Urban food markets in Africa: Incentivizing food safety using a pull-push approach* project focusing on consumers of chicken meat. The project has further built a partnership with the Medical Research Council (MRC) unit based in The Gambia and part of the London School of Hygiene and Tropical Medicine (LSHTM), which allowed a graduate student to attend a training course on genomics and bioinformatics in April 2023 at the MRC in The Gambia.

Figure 2 Stakeholders discussing poultry vaccination strategies (Photo credit: M.Dione)

Throughout its implementation, the project will strengthen links with partners and stakeholders, which is key for sustainability. It will further encourage the One Health culture among partners, by building on learnings from the interventions' field evaluations.

Vaccinating for Change: Gender-Responsive Strategies in Poultry Health and Women's Empowerment

Woman vaccinating a man's chicken.
Photo credit: Michel Dione, ILRI

Gender-based restrictions affect women's access to animal vaccines and thus the potential for livestock to empower them and support their livelihoods. Mobility barriers, for instance, make it difficult for women livestock keepers to access vaccines, extension services, information, and markets and, consequently, to raise healthy and productive livestock (Jumba, et al. 2020). Recent research in Senegal has shown that gender norms play a significant role in livestock vaccine value chains (McKune, et al. 2021). If women's access to livestock vaccines improves, households may be more likely to adopt new agricultural technologies and approaches. Therefore, women's empowerment is important for livestock vaccine adoption because empowered livestock keepers are more likely to adopt vaccines (Omondi, et al. 2022).

In Burkina Faso, Newcastle disease is the most feared chicken disease by farmers due to its high mortality rate. Vaccination is the only disease control tool to fight it, and it is carried out by Vulgarisateurs Volontaires Villageois (VVV, village volunteer extension workers). These groups of village vaccinators are predominantly men due to social dynamics and logistical convenience. However, a dedicated team led by Dr. Michel Dione in the Poultry Losses and One Health project is looking for ways to shift this dynamic.

The intervention

Using a One Health approach, the project provides integrated educational and training packages as part of a holistic approach that promotes behavioral change for improvements in poultry management, farming, and hygiene practices. The approach purposefully considers how gender dynamics may affect women and girls across human, animal, and environmental health dimensions of poultry production and helps shape a more gender-responsive system. Though women are highly involved in chicken rearing, they are often not allowed to socialize outside the home after a certain time of the day or travel long distances to different communities. To address these challenges, the project is implementing capacity development efforts to increase women's involvement in vaccination by working with women VVV. In each of the ten intervention villages, one man and one woman were trained as poultry vaccinators. While the intervention will continue until at least November 2024, some of the benefits are already being observed; for instance, poultry owners mentioned feeling more comfortable with women vaccinators because they are more meticulous in their work. Women vaccinators can be at home and still be easily reached by their clients, i.e., poultry owners when vaccination services are needed.

What we have learned

The key takeaway is that empowering women and improving their access for example to vaccinations does not happen overnight. Gender dynamics can shift through capacity building and by supporting innovative approaches, like engaging women as volunteer vaccinators. When women can become involved, they can contribute to better outcomes for everyone, leading to healthier livestock and more empowered households.

References

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