The LIDISKI Story

and evidence of impact

European Union

LIDISKI
Livestock Disease Surveillance Knowledge Integration

cirad

IKORE

Istituto Zooprofilattico Sperimentale delle Venezie

DeSIRA
PARTNERSHIPS FOR INNOVATION

DISCLAIMER

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FOREWORD

The LIDISKI (European Union supports Livestock Disease Surveillance and Knowledge Integration) project represents a beacon of hope and resilience for smallholder livestock farmers in Nigeria. Initiated with EU support to strengthen disease surveillance and knowledge sharing, the project addresses the urgent need to prevent and control debilitating diseases like Peste des Petits Ruminants (PPR) and Newcastle Disease (ND) in Plateau, Kano, and Bauchi states. In these regions, -LIDISKI is empowering local farmers to enhance livestock health, improve livelihoods, and build resilience against the growing climate challenges they face, using approaches and tools ready to be implemented across Nigeria.

This collection of "Impact Stories" showcases the remarkable journeys of farmers, communities, and consortium partners working collaboratively to contribute to animal health and market stability. With a coalition of four committed partners – NVRI, CIRAD, IKORE, and IZSVe – the project leverages the strengths of each organization, from research expertise to field implementation and community engagement. Together, they have developed an integrative approach to disease prevention and control, blending scientific insight with local knowledge to reach smallholder farmers effectively.

These stories are a testament to the transformative power of collaboration. They highlight not only the technical advances made in disease surveillance and control but also the human impact of these efforts: healthier livestock, improved incomes, and strengthened communities. The work of the LIDISKI project provides valuable lessons in resilience, empowering farmers to protect their animals and livelihoods in a changing world.

These stories illustrate how an integrative, participatory and collaborative action can drive progress for smallholder communities, that can be scaled up to foster a more resilient livestock sector.

Arnaud Bataille.
Project Coordinator

The LIDISKI STORY

& Evidence of Impact

Introduction

The EU-supported Livestock Disease Surveillance Knowledge Integration (LIDISKI) project was initiated to enhance the resilience and livelihoods of smallholder livestock farmers in Nigeria, particularly as they face growing climate-related challenges. Launched in 2020 after receiving approval in 2019, the project focused on improving disease control and surveillance, especially in Plateau, Bauchi, and Kano states. By using an innovative participatory partnership approach, LIDISKI aimed to empower smallholder farmers—who depend heavily on livestock for nutrition and financial stability—to better protect their livestock from disease outbreaks. This approach has led to measurable increases in disease surveillance capacity and positive behavioral changes within the communities involved.

Context

Small ruminants, like sheep and goats, hold immense socio-economic significance in Nigeria, especially among rural populations. For millions of smallholder farmers, these animals represent a critical source of income, food security through meat and milk, and cultural value as they play important roles in ceremonies and wealth transfer. Unfortunately, this sector is highly vulnerable to diseases like Peste des Petits Ruminants (PPR), which can devastate herds, with mortality rates reaching up to 80%. Outbreaks of PPR not only cause severe financial losses but also destabilize rural communities dependent on livestock farming. Climate change exacerbates this issue by influencing disease patterns and driving migration, which heightens the risk of disease spread.

In addition to small ruminants, Nigeria's poultry sector is essential for many rural and peri-urban households, with chickens providing both food and income. Newcastle Disease (ND) poses a severe threat to this sector, causing high mortality rates and reduced productivity, which can lead to devastating economic consequences for small-scale poultry farmers.

Exacerbating factors

Addressing diseases like PPR and ND is challenging due to limitations in Nigeria's disease surveillance infrastructure, funding constraints, and poor coordination between veterinary services and local communities. **Effective disease control requires robust surveillance and rapid response systems; however, Nigeria's systems remain under-resourced, with weak reporting mechanisms, low farmer awareness, and inadequate veterinary extension services**. Climate change is further complicating control measures by accelerating disease spread, increasing temperature variability, altering rainfall patterns, and contributing to more extreme weather events. Seasonal livestock migrations also lead to overcrowding and heightened disease transmission.

Vaccination: The most cost-effective tool

Globally, vaccination is considered one of the most effective tools for controlling livestock diseases like PPR and ND. However, Nigeria faces considerable obstacles in deploying vaccines at scale, especially in rural areas where livestock farming is most prevalent. Infrastructure limitations, cold chain challenges, and supply chain constraints prevent vaccines from reaching many smallholder farmers. Additionally, limited access to alternative energy sources undermines vaccine storage and efficacy, further impeding disease control efforts. Policy support for comprehensive livestock disease management is limited in Nigeria, with insufficient budget allocations for veterinary services and gaps in infrastructure, especially for vaccine distribution in rural areas. The absence of clear policies integrating climate change adaptation into livestock health management also hinders effective disease control.

Addressing the Gaps: The LIDISKI Project

The LIDISKI project, implemented by a consortium comprising CIRAD, IZSVe, National Veterinary Research Institute (NVRI), and Ikore International Development Limited, was designed to bridge these gaps by implementing an innovative, partnership-driven approach to disease surveillance and control.

The Consortium of partners delivered the LIDISKI Project through four interdependent actions:

1. Understanding the epidemiological and socioeconomic context of PPR and ND,
2. **Capacity building**: Improving the capacities (human and material) of Nigerian animal health actors in PPR and NDV surveillance and control,
3. **Engaging:** Increasing activities of field actors in vaccination and disease reporting, ensuring good practices and sustainability through better communication, and
4. **Developing tools and guidelines:** Providing NVRI, federal and state governments with tools and guidelines to design policies that support strategies for ND and PPR surveillance and control in Nigeria.

1. Understanding the Epidemiological and Socioeconomic Context of PPR and ND

Whereas a body of work exists on the socio-economic and epidemiological context of PPR and ND in Nigeria, there were also important gaps that needed to be filled. Data needed to be collected from the start of the project to better understand the magnitude of the work to be done during the project and scale appropriately according to real needs and capacities.

At the outset of the project, capacitated NVRI staff, accompanied by local and international experts designed and implemented participatory socio-economic and epidemiological surveys focused on PPR and ND distribution and impact on targeted communities; the perception of the disease and vaccination cost-benefits, gender-specific issues, and the impact of climatic events on their livelihood.

Overall, the Project collected epidemiological data on nearly 1,830 small ruminants (sheep and goats) regarding PPR and 861 poultry regarding ND. The comprehensive data collected provided critical insights into the disease burden in the coverage area and informed the design of targeted control strategies.

As part of this initiative, LIDISKI developed a new diagnostic protocol for ND, representing a significant advancement in the detection and management of this high-risk disease in Nigeria. The evidence generated from these surveys also informed the approach to ongoing knowledge transfer and the dissemination of best animal health practices to rural communities through community animal health workers.

2. Capacity Building: Strengthening Surveillance and Control Capabilities

Efficient and sustainable surveillance and control depend on swift disease reporting, easy access to efficient vaccines, and application of adapted control measures. To achieve this, the LIDISKI Project deployed a three-pronged approach to improve both human and material capacity for PPR and ND surveillance and control; i). Capacity building of NVRI staff and field veterinarians in the recognition of disease signs, and collection and storage of animal sampling for diagnosis. ii). Strengthening institutional capacity (Veterinary Council of Nigeria and state Department of Veterinary Services) to establish and run the community animal health workers program, and iii). Provide alternate energy sources to boost the production capacity of NVRI.

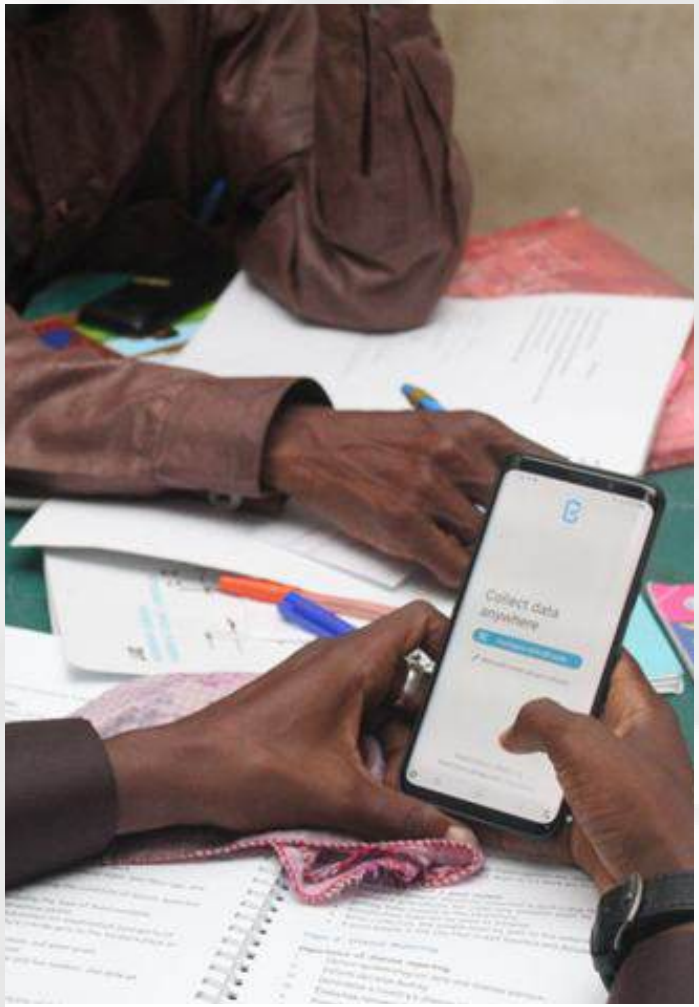
Through LIDISKI, NVRI staff were trained on PPR and ND virus genotyping and characterization methods, providing important information for disease control. The efficacy of the ND vaccine currently used in rural areas was tested against circulating strains and emerging evidence that will be vital to the development of new vaccine products. Other areas of capacity support to field veterinarians included quantitative and qualitative methods in sampling design, epidemiology, and socio-economy to give them the means to design and implement the fieldwork to be carried out during this project and in future activities.

To strengthen the establishment of the CAHW network in targeted states, LIDISKI worked closely with the Veterinary Council of Nigeria and the State Department of Veterinary Services to map out areas of need, undertake a training-of-trainer session and support subsequent cascading the training to selected community members, providing them kits to start up the business of vaccine service delivery. To strengthen reporting and collaboration across the animal health delivery chain, the national disease reporting tool was adapted and deployed through open data kits on smartphones, through which CAHWs reported their activities and observations in the communities. Reports from communities were accessible in real-time by NVRI and the State dept. of veterinary services, improving the state's responsiveness to disease suspicions. From the point of introduction of the project to the Community Animal Health Workers, over 39,000 reports have come through from communities across the three states.

Providing a secure source of electricity is key to the surveillance and control activities of the NVRI, both in laboratories and outposts. To address this, LIDISKI provided a 65KVA solar panel installation at NVRI HQ and designated outposts as a climate-smart solution to electricity shortage, allowing for better storage and delivery of diagnostic samples and vaccines, and for computerized data collection on disease suspicions in the field.

Throughout the life of the project, LIDISKI facilitated access to millions of vaccine doses/year for PPR and ND in remote rural areas to drive effective disease control efforts. LIDISKI also strengthened the capacities of over 138 CAHWs to provide rural veterinary support to farmers and supported the training of 34 field veterinarians, and public veterinarians from NVRI and the states to train and provide field support to the CAHWs. The Project also trained 118 Veterinary researchers in field research, data collection, data analysis, and monitoring and evaluation to support disease surveillance and control efforts.

Additionally, the kits the Project distributed to CAHWs provided them with essential tools to effectively conduct surveillance and vaccination activities. The business of vaccination, combined with the provision of other veterinary inputs by the CAHWs to their communities has proven to be a viable model, guaranteeing their continued service offerings to farmers beyond the life of the Project. Within the three targeted states, over 239,000 smallholder livestock farmers routinely seek vaccines and other animal health services from the CAHWs.



3. Engaging Farmers: Promoting Awareness and Active Participation

Community engagement was integral to the success of the LIDISKI project. Often, livestock farmers do not report disease occurrence, may not vaccinate, or follow good practices for vaccination. Through the series of participatory socio-economic and epidemiological surveys, the Project, together with the community members, was able to identify underlying reasons for this lack of engagement, including gendered barriers. The findings informed the choice of communication and awareness campaigns undertaken, on the importance of disease reporting and of following good vaccination practices. An integrated communication approach was adopted, including the use of radio, posters, community activations as well as field vets and CAHWs; the involvement of the latter to ensure long-term engagement with communities.

The project reached more than 222,000 smallholder farmers across the three states through 15 targeted information/vaccination campaigns, and the use of radio reaching over 3 million farmers. These campaigns emphasized disease prevention, the importance of adhering to vaccination schedules, and the need for early disease reporting. As a result, farmers became more informed about disease control practices, strengthening their commitment to livestock health and contributing to sustainable outcomes. The end game for the awareness campaigns was to improve by up to 90%, vaccine adoption by livestock farmers in targeted locations, this was the case in most locations with active CAHWs.

4. Developing Tools and Guidelines for Sustained Disease Control

As a part of its exit strategy and to ensure the lasting impact of the project's achievements, LIDISKI developed a suite of 43 tools, including surveillance protocols, risk maps, and control strategies for PPR and ND, which were distributed to NVRI, as well as federal and state government agencies. These resources are designed to strengthen local disease management efforts and inform policy development on disease surveillance and control.

Already, the tools are being integrated into local veterinary frameworks, empowering health authorities and farmers with the knowledge needed for informed decision-making in future disease management.

One important tool developed by the Project is the establishment of a phone-based data collection system in the field to allow instant storage of data in a centralized data collection system at NVRI, and accessible by other veterinary regulatory stakeholders. This system provides rapid information on disease occurrence and suspicions and gives access to all types of data collected during the project and in future activities of the NVRI. This system strengthens the capacity of NVRI and the government to swiftly respond to disease emergence and ensure easy access to information to staff for future analyses.

Summary of the LIDISKI achievement in 5 years.

Direct Impact

288 Animal health Actors Capacitated

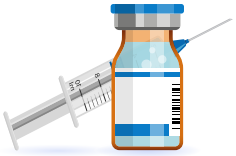
Who championed disease control and surveillance

65KVA Solar power Installed

at NVRI and its outstations to improve vaccine production, diagnosis and reporting

Est. **9.85 Million People**

reached through information campaign (Including Farmers)



1.85 Million doses of vaccine sold

through CAHWs of Farmers

Est. **240,000 farmers Benefited**

reached with vaccination

€2.1 million

additional income from vaccination

Contribution to the body of knowledge

5 Researches

on disease pattern and vaccine

1 Protocol developed

for Newcastle disease diagnosis

Summary of the LIDISKI achievement in 5 years.

Wider Sector Impact

Enterprise development

27 Agrovet stores established by CAHWs → Other Vet. products delivered via CAHW

39,000 Farmers
accessing other vets input through CAHWs

Income diversification

Farmers investing in productivity Asset

→ **2** Solar Fridges secured by CAHWs

↘ **6** Milling machines procured by Livestock Farmers

Institutional Strengthening

4 i/NGOs copying and replicating

3 Implementing states taking ownership of surveillance and control working with CAHWS

Evidence of Impact

Transforming Families and Communities, One Vaccine at a Time

- **LIDISKI Impact Story**

Before the LIDSIKI project was launched in Plateau State, Faith Gokum, a mother of three from Kanke Local Government Area of the state, ran a modest provision shop in her hometown. This was her primary source of income, and her days were spent selling just enough to make the business worth sustaining.

Like many livestock farmers and rural dwellers, Faith had witnessed the devastating toll of disease outbreaks on animals year after year. Peste des Petits Ruminants and Newcastle Disease repeatedly swept through their local government area, causing widespread animal deaths. These outbreaks left farmers in a state of helpless despair as they watched their livelihoods crumble. The constant threat of an outbreak kept them in perpetual anxiety and their livelihoods hanging on a balance. For many communities, awareness of and access to veterinary care and disease prevention were virtually non-existent.

Faith's transformative journey, both for herself and for her community, started when she was selected by LIDISKI to be trained as a CAHW. This opportunity opened her eyes to the immense challenges faced by livestock farmers and more importantly, equipped her with the knowledge and tools to make a difference. The training covered critical aspects of animal health, including general livestock management (housing, feeding, etc.), disease types, signs and prevention, vaccination schedules, wound management, and disease surveillance including reporting biosecurity and basic veterinary care. These skills became the foundation for what would soon become Faith's thriving business.

After completing her training, Faith saw a chance to combine her entrepreneurial spirit with her newfound skills to make an impact. She opened a small agro-store, initially stocking only a handful of vaccines, including just ten vials of NDi2 vaccine for Newcastle Disease. Faith's dedication to serving her community soon became evident, and her store quickly became the go-to place for farmers seeking veterinary supplies. Her customer base grew steadily as farmers came to trust her reliable services and expertise.

However, as the demand for vaccines increased, Faith faced a major challenge: how could she keep the vaccines viable in the face of unreliable power supply? The ND and PPR vaccines need to be stored at specific cold temperatures to remain effective. Recognizing the importance of maintaining vaccine efficacy in disease prevention, Faith found a solution. Raising capital from her newly growing business, Faith purchased a solar-powered fridge—an essential tool for keeping vaccines at the right temperature despite the area's erratic power supply. This investment enabled Faith to store more vaccines and ensure their potency, helping her community fight livestock diseases more effectively.

"Vaccines need to be kept cold to work", says Faith. "If they lose their potency, the animals won't be protected. I've seen how much livestock can suffer, and I didn't want to see that happen in my community anymore."

The results were transformative. Not only could Faith now offer reliable vaccines to farmers in her community, but her reach expanded to neighboring communities and states as well. Today, she supplies vaccines across multiple states, becoming a crucial player in the battle against livestock disease in northern Nigeria. Faith now safely stores larger quantities of vaccines and supplies to Kanke and other states with profound impact. Faith has vaccinated over 6,500 livestock against PPR and ND, helping to reduce the incidences of these diseases. Her monthly turnover is now 500,000 naira on the average, and her agro-store has become a trusted source of animal health solutions for farmers in Kanke and surrounding areas.

Through her work, Faith is changing the landscape of animal health in Kanke and beyond. Farmers now have access to vaccines that are properly stored, potent, and readily available—a lifeline that has dramatically reduced livestock deaths and improved disease control across the region. Looking ahead, Faith's vision extends beyond just her own success. She plans to expand her business further to meet growing demand and reach even more farmers and communities.

Empowering Livestock Farmers and Building Resilience through the LIDISKI Project

- **LIDISKI Impact Story**

For Zahratu, a poultry and livestock farmer in Bauchi State, the project has been life-changing.

Zahratu's livelihood relies on her small flock of local chickens, which she depends on to support her household. However, frequent outbreaks of Newcastle disease, particularly during the extended harmattan season, have devastated her flock year after year. Each November, knowing the harmattan would soon arrive and bring a deadly threat to her chickens, she would sell off her stock to avoid the near-certain losses. The lengthening harmattan periods have worsened in recent years, with disease outbreaks causing 100% mortality in her birds. This struggle wasn't unique to Zahratu; other community members faced similar losses, and at times, it became rare even to find local chickens in her area.

One day, during a visit to a nearby village, Zahratu noticed her friend's chickens were being vaccinated by Nasiru, a trained Community Animal Health Worker (CAHW) through the LIDISKI Project. Nasiru had been providing essential veterinary services to smallholder farmers who otherwise lacked access to them, bringing a newfound hope for disease prevention. For Zahratu, it was eye-opening; she hadn't known her chickens could be protected from the disease. Nasiru explained the benefits of the ND-i2 vaccine, which protected chickens from Newcastle disease, and encouraged Zahratu to vaccinate her flock as a preventive measure.

Since Nasiru began vaccinating her chickens (and her small ruminants) three years ago, Zahratu has not experienced a single outbreak of Newcastle disease. The vaccine gave her the confidence to keep her chickens year-round, and with that stability, her flock began to grow. Not only did her income increase, but she was able to break the cycle of fear and loss that had limited her income for so long.

Earlier this year, Zahratu used the profits she earned from selling her mature chickens to invest in a small farm. With the additional income, she purchased seedlings for her farm and bought a small refrigerator for her business. This has expanded her livelihood beyond poultry, opening new opportunities for her family's future.

Through the work of CAHWs like Nasiru, the LIDISKI Project is fostering resilience within communities, enabling smallholder farmers to manage animal health independently and sustainably. The project's impact is profound, as it not only improves productivity but also safeguards families against the devastating effects of disease and environmental change.

For Zahratu, the project has been a bridge to resilience and growth, allowing her to envision a future where her livelihood is secure.

"Thanks to Mallam Nasiru's help, I can now keep my livestock safe, and the income has allowed me to improve my livelihood," she shared.

Her story reflects the LIDISKI Project's success in empowering farmers, creating healthier livestock populations, and helping smallholder families build a stable and sustainable future.

From Vulnerability to Victory: Protecting Livelihoods of Pastoralist Communities

- **LIDISKI Impact Story**

For years, Mohammad, a small-scale livestock farmer from Kano State, Nigeria, struggled to protect his sheep from outbreaks of Peste des petits ruminants (PPR), a contagious disease devastating to livestock. Each year, he lost animals and his only reliable source of income, putting his family's financial stability at risk. As a father, Muhammad relied on the income from his sheep and goat not only for daily expenses but also to help cover his children's school fees. Losing his animals meant more than just a financial hit; it meant compromising his family's future. This was recurring, yearly.

"I lost 28 sheep and goats to PPR over the years and eventually thought I might give up on rearing them altogether," Muhammad recalled.

The tide turned when the EU-funded LIDISKI Project, focused on sustainable livestock development and disease control, came to his community. Implemented by Ikore in partnership with the National Veterinary Research Institute (NVRI), the project organized a sensitization campaign in his community to educate residents about preventing PPR and introduce a dedicated Community Animal Health Worker (CAHW) named Nuhu. Nuhu was trained to support local farmers by providing accessible veterinary services and disease control for sheep and goats in their area.

During the campaign, community members, including Muhammad, were provided with posters showing images of goats and sheep affected by PPR, helping them identify symptoms they had seen before but did not fully understand. Muhammad asked Nuhu about managing PPR, and he reassured him that there was a path to prevent his animals from falling ill.

Shortly after the campaign, Nuhu made a personal visit to Muhammad's household, where he examined his herd. He advised him to isolate the sick animals from the healthy ones and, a few days later, returned to vaccinate the rest of his sheep and goat. This intervention marked a turning point for Muhammad's livelihood. For the first time, he had access to affordable veterinary care. Though the vaccination service came with a small fee, it was within his means, and it kept his sheep and goats safe from the disease that had plagued his herd for years.

The impact of Nuhu's work went beyond Muhammad's family. He visited the Fulani herders in the area along with local community leaders to discuss the benefits of vaccination. Like Muhammad, the herders faced losses due to PPR and were open to Nuhu's advice on safeguarding their livestock. With a wider network of livestock owners taking preventive action, the risk of disease spread in the community is drastically reduced.

For Muhammad, these interventions have transformed his livelihood.

"I'm happy to say my sheep and goats are no longer dying, and last year, I was even able to increase my herd size from the money I made by selling some of my sheep and goats," he shared with pride.

The consistent income from his livestock has given him a renewed sense of financial security and the ability to better provide for his family.

"With Nuhu's help, I can manage my livestock's health better and have made enough profit to take good care of my family, especially my children," Muhammad reflected.

The LIDISKI Project has given him not only the means to sustain his animals but also the opportunity to improve his family's life, proving that targeted, community-driven support can empower pastoralist families to overcome longstanding challenges and build sustainable livelihoods.

Hope in Kabwir: How One Woman's Knowledge Saved a Village's Livestock

LIDISKI Impact Story

In the small, tightly-knit Kabwir community in Plateau State, farmers faced a painful cycle each year. Their chickens, central to their livelihoods, would inexplicably start dying off, showing symptoms like sleepiness, thirst, and strange, greenish stool. Desperate to save at least part of their flocks, many farmers resorted to distress sales, only to see the disease spread even faster in crowded animal markets.

For Joy, a farmer in Kabwir, this yearly devastation was personal.

"I rear birds, and it bothers me why they keep dying at that particular time every year," she recalls.

When she heard about the LIDISKI project's Community Animal Health Workers (CAHWs) training, Joy saw a way to change things. Motivated and glad to have been selected, she was eager to learn what was killing her birds—and what could be done to stop it.

During her training, Joy discovered that Newcastle disease was the culprit behind these seasonal losses. The program armed her with critical skills: diagnosing diseases, administering treatments, managing vaccines, and guiding farmers on prevention strategies. She took her new knowledge back to Kabwir and got to work. Soon, Joy was making regular rounds, educating her neighbors on animal husbandry and preventive care, and even setting up a small clinic to treat sick birds.

In her community, the change has been dramatic. "Since I started providing services, the animals hardly die," Joy shares proudly. "One farmer had just ten birds when I started this work in 2021. Now he has over seventy." Even during cashless policy changes that made payments harder, farmers called on Joy, trusting her care and paying later if needed.

Today, Kabwir's flocks are healthier, more productive, and no longer haunted by mysterious, deadly outbreaks. Joy's work has given her community a path to stability and growth, and her story has inspired hope far beyond her village. In her role as a CAHW, Joy shows how one person's dedication can transform an entire community, creating a future where rural families thrive and livestock flourish.

Strengthening the foundation for long-term agricultural resilience, climate adaptation, and poverty reduction through Innovative Solutions

- **LIDISKI Impact Story**

In Nigeria, the EU-funded LIDISKI Project has made a transformative impact on livestock healthcare and agricultural resilience through the strategic installation of solar-powered infrastructure. This innovative intervention has provided sustainable energy solutions to the National Veterinary Research Institute (NVRI) headquarters and five outstations across various states. The primary aim is to support NVRI in maintaining an uninterrupted cold chain for poultry and livestock vaccines, which are crucial for rural livestock health and productivity. By ensuring a stable power source, this initiative significantly reduces operational costs and enhances vaccine effectiveness, ultimately benefiting pastoralist communities.

At the NVRI outstation in Bauchi State, Dr. Atuman observed, *"There is a dramatic 77% reduction in energy costs, allowing the facility to save on overhead expenses and reinvest these funds into other critical resources"*.

Dr. Audu Shekaro from the Kaduna outstation reported, *"There is an impressive 99% decrease in vaccine wastage. The solar infrastructure has also extended the outstation's outreach by 50%, allowing them to provide livestock health services to remote areas that were previously underserved. Furthermore, the credibility of their sample handling has improved by 60%, enhancing the trust and reliability of NVRI's vaccine distribution"*.

Dr. Sada Aliyu, leading the Kano outstation, noted, *"The reliance on solar energy has notably reduced the need for expensive diesel generators and power from the national grid. As a result, the laboratory now saves between ₦150,000 and ₦250,000 monthly on energy expenses, reflecting the efficiency and cost-saving potential of solar infrastructure"*.

In alignment with Climate-Smart Agriculture (CSA) principles, the solar-powered infrastructure underscores a commitment to sustainable energy use. By replacing fossil fuel-dependent systems with renewable energy sources, NVRI and its outstations are actively reducing greenhouse gas emissions. This shift is crucial for climate mitigation, as it lowers the carbon footprint of livestock health services. Consequently, NVRI's vaccine production and distribution efforts now contribute to cleaner, greener agricultural practices in Nigeria, helping pastoral communities achieve more sustainable livestock management.

NVRI's role in vaccine production, disease diagnosis, and prevention is fundamental to improving livestock health and productivity. Healthy livestock are more resource-efficient, reducing the environmental footprint per unit of output, which is a vital goal of CSA. The solar-powered facilities ensure uninterrupted diagnostic and vaccination services, enhancing the reliability and reach of livestock healthcare. Timely disease management is critical to preventing outbreaks that could devastate rural economies.

With affordable, accessible vaccines and reliable diagnostic services, livestock farmers are better equipped to prevent disease, protect their livelihoods, and sustain their incomes. This increased stability is essential for reducing poverty levels in rural communities. The LIDISKI Project's solar infrastructure empowers NVRI to build resilience within pastoralist communities, enabling them to better cope with the economic challenges posed by climate variability.

Through sustainable energy integration and robust livestock healthcare, the LIDISKI Project has strengthened the foundation for long-term agricultural resilience, climate adaptation, and poverty reduction, making it a pivotal initiative for the future of Nigeria's rural communities.

Empowering Farmers in Lusa through Participatory Knowledge Sharing: CIRAD, Ikore and NVRI's Impact on Combating Newcastle Disease and PPR

- **LIDISKI Impact Story**

In the quiet community of Lusa, Bauchi State, where livestock and poultry farming are the backbone of many households' livelihoods, diseases like Newcastle Disease (ND) and Peste des petits ruminants (PPR) have caused devastating impacts. For years, farmers have lost significant portions of their flocks and herds, unaware of preventive and control measures, including the existence of vaccines, that could protect their animals and secure their income. Ironically, farmers have come to accept the occurrence of these diseases as part of life, making a fresh start after each devastating outbreak. It was thus necessary for the LIDISKI Project to adopt a participatory approach to understanding the impact of the disease and co-creating the solution with members of the community. In the participatory approach, the LIDISKI research team guides the farmers through a process that allows them to recognize the signs of diseases - PPR and ND, and through the guided process, the community can map out areas of disease occurrence, animal population, and migratory routes. Community members are also able to estimate the cost of both diseases to families and the community at large and more importantly, the key drivers to the continued disease burden. This understanding makes it easier for community members to arrive at the solution - in this case, vaccines and vaccination, - and most notably, the adoption rate becomes higher when this bottom-up approach is used. Farmers themselves become active researchers/participants in understanding their problems and designing their own solutions.

The village head of Lusa community acknowledged that this was the first time he was sitting together with any organization that wanted to bring a project to their community; according to him,

"This is the first time I am understanding how much information we have in the community about the disease, and animal movement and how this information is important to creating a solution. For the first time, not just me, but also the council of chiefs, came together to agree that vaccination is the way to go and we are committed to embracing it".

Recounting what the Project did in his community, the Village Head mentioned that the Project team (CIRAD and NVRI) engaged with farmers in an interactive and hands-on manner, fostering an environment of shared learning - ***"We shared our knowledge regarding the two diseases as well as our concerns. Together with the LIDISKI team, we found that we did not have complete information about the disease, and we did not know that vaccines could help us"***.

"I now have considerable knowledge about vaccines and vaccination for my livestock. Before, I never knew livestock could be vaccinated against deadly diseases.", a farmer confirmed.

The introduction of CAHWs into the communities also ensured continued engagement and education of farmers in the Lusa community.

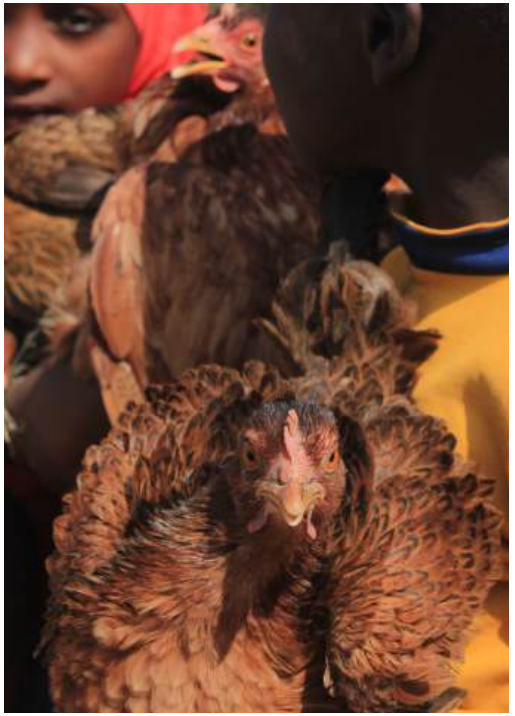
"I have learned how to identify signs related to some diseases. Before they (LIDISKI) came, when the animals stand at one spot or become slow, we just catch and slaughter because we don't want to lose them" - farmer

The more informed the farmers are on disease identification and the benefits of vaccination, they are more likely to adopt vaccination, this is the case in Lusa as most livestock farmers now routinely vaccinate their animals as the CAHW in the community continues to engage in knowledge sharing.

"Before, many farmers did not trust me but now I am trusted (sic) especially because of that banner and fliers given by LIDISKI". A LIDISKI-trained CAHW confirmed.

By prioritizing knowledge sharing and fostering collaboration, LIDISKI promoted an integrated approach that involves the consideration of the whole system to improve disease awareness, vaccine availability, and access to community-based animal healthcare system thereby equipping farmers with the skills to secure their livelihoods and building resilience against future disease threats thereby transforming livestock health practices in Lusa, offering a promising model for similar communities across Bauchi State and beyond.










NEWCASTLE


NVRI
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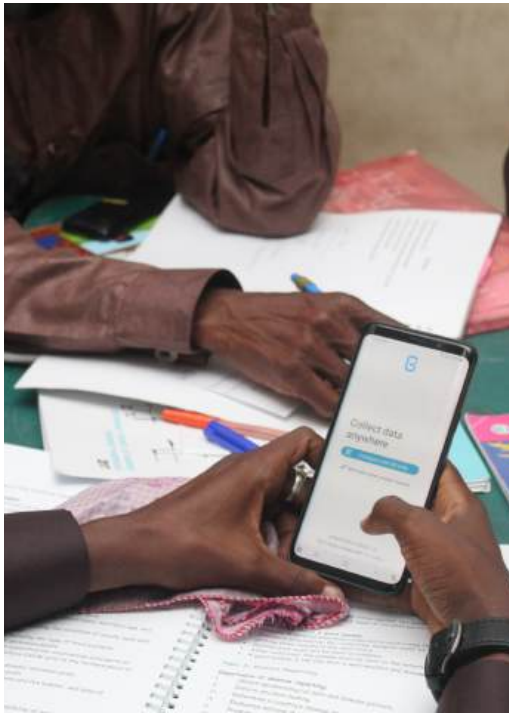
Collect data
anywhere


CAHW


VILLAGE HEAD OFFICE
TYPIST OFFICE


EVISCO

European Union

LIDISKI
Livestock Disease Surveillance Knowledge Integration

cirad

IKORE

Istituto Zooprofilattico Sperimentale delle Venezie

DeSIRA
PARTNERSHIPS FOR INNOVATION