

CAPACITY DEVELOPMENT GAP ANALYSIS: BURKINA FASO

Introduction

Since 2018, the Feed the Future Innovation Lab for Livestock Systems' **Human and Institutional Capacity Development (HICD)** team has been collaborating with livestock-related research and academic institutions in Burkina Faso to identify and assess the training and organizational development needs that would lead to improving their research and teaching capacity in the livestock sector. Using participatory rapid assessment methods, the team identified several gap areas related to human (individual), organizational, and environmental needs. This summary provides a general outline of these gap areas and recommendations.

Participating organizations in the HICD assessment studies in Burkina Faso

- **APES:** Association for the Promotion of Livestock in the Sahel and Savannah
- **CIRDES:** International Center for Research and Development on Livestock Production in the Sub-humid Zone
- **ENESA:** National School of Livestock and Animal Health
- **INERA:** Institute of Environmental and Agricultural Research
- **IRSAT:** The Institute of Research in Applied Sciences and Technology
- **UO:** University of Ouagadougou
- **UNB:** University of Nazi Boni
- **UJK:** University of Joseph Kizerbo

Human Capacity Development

Technological and practical skills gaps (Table 1) were identified across all the partnering organizations. Where possible, short-term trainings to address these gaps should utilize a Training of Trainers (TOT) model that is also supported with an operational plan that funds and provides management oversight for these trainers to then train others. The TOT model will help strengthen the capacity of existing and long-term lecturers and researchers who will pass improved skills to a larger body of students and young professionals. The HICD team recommends that, when possible, these trainings should include at least one follow-up session rather than a “one-and-done” training approach.

Table 1: Skills gaps in Research, Technical Knowledge, and Extension

Research Design & Methods	Technical Knowledge	Extension
<ul style="list-style-type: none"> • Data analysis and modeling • Grant writing and funding sources • Livestock modeling • Methods for disseminating research products • Research protocol development • Scientific writing • Statistics and statistical analyses 	<ul style="list-style-type: none"> • Value chain development and management (for livestock species & crops) • Laboratory management and technical skills • Animal feeding guidelines • Forage analysis • Forage production and climate change • Genetics, animal breeding and livestock improvement • Meat hygiene • New technologies for milk production • Semen technologies for animal breeding • Technologies for animal performance • Value addition including production, processing, packaging, distribution, commercialization, and marketing of animal products 	<ul style="list-style-type: none"> • Communication for extension education and development • Dissemination of research findings • Extension methodologies and approaches • Research and extension linkages and approaches • Small business and enterprise development • Training of technicians

Organizational Capacity Development

Laboratory management: Understaffing and lack of laboratory skills to maintain and fix equipment among laboratory technicians are acute. Laboratory staff along with lecturers and researchers can benefit greatly from training on how to run, maintain, and repair laboratory equipment as well as on general administrative duties associated with managing a lab.

Information systems: Researchers in Burkina Faso would benefit from having access to a central repository that collects, filters, stores, and processes digital information. This includes information needed on mitigation approaches and adaptation strategies for climate change effects on animal production, sustainable forage production, and how to improve the sustainability of the livestock sector. There is also a need for an information system that can facilitate the dissemination of research findings to support decision making and collaboration among academics, researchers, and practitioners.

Curriculum gaps: Students would benefit greatly from updated curricula to incorporate critical and interdisciplinary thinking and the social component of animal and veterinary sciences. Emphasis on practical applications can help students acquire hands-on and field experience.

Institutional relationships: Partnerships between INERA, universities, and industry should be developed and/or strengthened. These relationships will lead to innovation and technology transfers and commercialization of research results that, in turn, would help academic and research institutions mobilize funds from industry for research.

Grant writing and management: Researchers would benefit from having access to a sponsored projects-related infrastructure within organizations (e.g., the Office of Research) to help with seeking grant funding opportunities, developing contracts with donors or granting agencies, and managing grant awards in compliance with donor, institution, and country regulations.

Research management system: Interviews with researchers and administrators pointed out the decentralized and stand-alone management systems (e.g., for Human Resources, Finance, etc.) within institutions that generate inefficiencies. A centralized system that consolidates human resources, finance, sponsored research, reporting, and other institutional resource planning activities on one platform will improve workflow, enhance internal controls, and provide protection to both institutions and researchers in a complex world of regulations. This aspect of organizational development can be integrated with grant writing and management support.

Enabling Environment

Infrastructure and material resources: The research institutions and universities lack upgraded infrastructure and material resources, particularly laboratories and well-resourced farms. This results in an inability to conduct novel research and a sense that graduates lack sufficient practical skills. There is a lack of updated equipment, knowledge to properly run a lab and maintain equipment, knowledge of the appropriate feed analysis tests, and a lack of understanding of how to accurately interpret test results. These issues are preventing modernization of the research. A lack of laboratory and field infrastructure and materials has a direct impact on the ability of faculty to implement practical skills training.

Library systems and information technology: There is a lack of sufficient library resources and information technology systems, such as access to computer facilities, high-speed internet, e-library tools, e-journals, analytical software, and distance education tools.

Gender constraints: Compared to universities, INERA employs more female researchers. Female researchers are usually in high administrative positions at universities or INERA. Therefore, female students stressed the need for more opportunities to engage with established female researchers as role-models, hear about their pathway to a career in research, and learn how to find work-life balance.



Assessment visit to a market

R&D investments and infrastructure: According to Magne Domgho, Neya and Stads (2017), Burkinaabe agricultural research spending as a share of agricultural gross domestic product reached the recommended 1% target set by the New Partnership for Africa’s Development and the United Nations in 2017. This percentage is better than in other West African countries, but it is still not adequate to support and boost Burkina Faso’s agricultural R&D, including R&D in the livestock sector. For example, while INERA has a large infrastructure (21 research laboratories, 13 of which are in Kamboinsé and 8 in Farako-Ba) 90% of them are outdated. INERA lacks facilities to manage and properly dispose of organic waste. It does not have sufficient vehicles to meet the growing needs. The number of computer servers is insufficient. Internet access is unreliable, exasperated by power outages. The available software is outdated. Combined, these shortcomings continue to hinder the agricultural R&D, including the livestock sector (Traore et al., 2014).

Extension linkages: Research, education and extension linkages between universities, research institutions and farmers are weak. Funding and a concerted effort are needed to develop and strengthen these linkages that will facilitate the transfer of research outputs and technologies to farmers and smallholders.



Collaboration with partners in Burkina Faso

The HICD team’s primary recommendations:

To improve research capacity, organizations must address the linkages and gaps between:

- laboratory infrastructure, resourcing, and management,
- the skills of researchers in research design, biostatistics, analytical methods (inclusive of modeling),
- policy and funding mechanisms at the state level, and
- the research and extension connection.

Recommendations

Human	<ul style="list-style-type: none">• Improve the capacity of researchers and laboratory technicians to manage laboratories, appropriately use laboratory equipment, and analyze results from laboratory tests.• Conduct short-term trainings to improve research capacity with a particular focus on the “research package” including design, analysis, statistics, modeling, and interpretation; grant and scholarly writing; and modern technologies and innovations.• Develop a Train-the-Trainer program with a series of trainings. Each training should be at least 3-5 days in length with sessions scheduled 2-3 months apart.• Strengthen training for animal health and veterinary services auxiliary providers. This training should focus on developing the skills of the community-level animal health care providers who are frequently the only animal health care providers in rural and remote communities.
Organizational	<ul style="list-style-type: none">• Develop an information sharing system to promote research collaboration and facilitate information dissemination to various stakeholders, including the private sector.• Develop a new cadre of professionals, technicians and other staff in the field of forage utilization.• Foster an organizational culture that facilitates research and technical skills development.
Environmental	<ul style="list-style-type: none">• Strengthen the cross-institutional collaboration to jointly set research priorities or apply for funding.• Strengthen cooperation with key international research networks through leveraging scarce human, social and physical resources.• Increase the availability of low-cost resources including assistance with accessing e-journals and strengthening e-library resources across academic and research institutions.

Reference List

- Magne Domgho, L. V., Neya, S., and Stads, G-J. 2017. Burkina Faso: Agricultural R&D indicators. Washington, DC: Agricultural Science and Technology Indicators (ASTI) and International Food Policy Research Institute (IFPRI). <https://www.asti.cgiar.org/sites/default/files/pdf/Burkina-Faso-Factsheet-2017.pdf>
- Traore, H., Traore, S., and Stads, G-J. 2014. Agricultural R&D in Burkina Faso: An Assessment of the Environment and Agricultural Research Institute. Washington, DC.: ASTI and IFPRI. July 2014. <https://www.asti.cgiar.org/pdf/coraf/BurkinaFaso-SummaryNote.pdf>

Disclaimer

This work was funded in whole or in 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 those of the authors alone.