

CAPACITY DEVELOPMENT GAP ANALYSIS: NEPAL

Introduction

In 2018, the Feed the Future Innovation Lab for Livestock Systems' **Human and Institutional Capacity Development (HICD)** team collaborated with the Agricultural and Forestry University of Nepal (AFU) and the Himalayan College of Agricultural Sciences & Technology (HICAST) to conduct a gap analysis to identify the training and organizational development needs that would lead to improved research and teaching capacity. The HICD team identified several gap areas related to the human (individual), organizational, and environmental needs. This summary provides a general outline of these gap areas and recommendations.



Faculty members in Nepal participate in the gap analysis.

Human Capacity Development

Laboratory and practical skills: Overall, the perception is that the curriculum is rigorous and competitive, particularly regarding theory. The areas of curriculum that participants are concerned with include laboratory and practical skills. There is a feedback loop in which faculty do not have the knowledge, time, or materials to teach the practical aspects of the curriculum, and the students who then graduate become faculty who cannot adequately teach practical skills. In addition to a lack of resources, there is a general lack of understanding of how to manage a laboratory, including knowing what equipment should be purchased, what it should be used for, how to maintain it, and how to interpret the data.

Faculty Training Needs

Areas that faculty identify for training needs include:

- Added value of animal-source food for human nutrition
- Incorporating biosecurity and WASH procedures for livestock management
- Community development skills including communication skills and gender/culture dynamics
- Entrepreneurial and business skills
- Grant and scholarly writing
- Laboratory skills and management
- Modern technologies and innovations
- Teaching pedagogy and practices
- The “research package” including design, analysis, statistics, modeling, and interpretation

Updating of faculty knowledge: There are limited opportunities for faculty to update their knowledge. This trickles into curriculum reform where there are complaints that the curriculum is not up-to-date with new changes in agriculture and livestock systems. A major barrier to the updating of faculty knowledge is the cultural practice of giving priority for opportunities (such as participation in training) based on age and number of years at an organization. This results in training opportunities being provided only to the senior faculty. The result of this practice is that those who have received updated knowledge and training are largely administrators who do not conduct teaching or research, or they are faculty who are nearing mandatory retirement age. In the long-term, there is a growing gap between junior and senior faculty in knowledge, skills, and attitudes. Finally, many of the university faculty who hold advanced degrees are nearing retirement.

Pedagogy: The quality of education and teaching practices varies widely. Some faculty members are highly engaging, responsive, and skilled. Others rely on PowerPoints and exams. There are reports of some faculty, particularly junior faculty, who have knowledge gaps in the area that they are teaching and either rely on students to teach one another or skip sections of the syllabi.

Community development and training: The community perceives that there is little involvement from the universities beyond student internships and site visits. The public would like to see students return the results of their work to the communities – whether it be laboratory results from blood samples taken in field practice or the results of a study conducted during an internship. Currently, this is not taking place, resulting in a growing sense of frustration with the universities. Coupled with these issues is a sense that the research conducted by the universities and research institutes is too “technological” and does not translate into solutions for farmers.

Organizational Capacity Development

Collaboration and communication: Because of the lack of adequate infrastructure (such as labs and teaching farms) at the universities, the institutions depend heavily on collaboration with outside organizations to conduct their teaching and research activities. Despite efforts on the part of both universities, there are insufficient linkages between institutions. There is a need for more collaboration for access to laboratories and farms, and formalization of collaboration with government agencies. Horizontal linkages within the institutions is also seen as an issue. There is also a significant gap between the private sector and universities.

Internal policies and procedures: Several policies and procedures directly affect the capacity of the faculty. The typical promotion system in Nepal is based on age and number of years at an institution. AFU has instituted a system that allows young faculty to be promoted at a faster rate based on education level and number of publications. The faculty report that the new system is motivating for them. However, there still exists an overall lack of accountability and a system that allows some to put forth little effort in their job versus others who put forth great effort. There is no formal evaluation or promotion system for teaching faculty. A system of teaching evaluation is also not in place. This results in students having no feedback mechanism for the instructor or college. There are no reward, incentive, or promotion mechanisms for participation in extension and outreach activities, despite extension and outreach being a government mandate. The universities do not specify job responsibilities adequately in contracts. This leads to issues of time allocation within the research-to-extension structure, a lack of foundation for job evaluations, and an overall lack of accountability. This extends to the support staff and other human resource personnel.

Enabling Environment

Research and extension mandate at AFU: When AFU gained independence from Tribhuvan University, the areas of research and outreach/extension (R/E) were added to their mandate. However, the overall management of the university, including budget allocation and time

Community Training Needs

Areas communities identify for training needs include:

- Biosecurity and WASH
- Business skills
- Developing fodder locally
- Farm management
- Fertility and reproductive management
- Husbandry
- Linking to markets
- Nutrition
- Ration balancing
- Value addition



Faculty and graduate students participate in a training on GIS mapping in R software.

allocation (for faculty and staff), has not yet caught up with the change in mandate. This is partially due to the addition of the R/E mandate without an increase in funding from the Nepali government, putting a strain on the existing AFU budget. It is a significant challenge for the university to meet these new mandates. Additionally, the Department of Livestock Services (DLS) is the government institution that has the role of extension for livestock. This puts AFU in direct conflict with DLS as a service provider. As of the writing of this summary, this issue has not been resolved and is both causing conflict between the organizations and is preventing AFU from developing and implementing a comprehensive plan and strategy for an outreach and extension program.

Infrastructure and material resources: The universities lack upgraded infrastructure and material resources, particularly laboratories and well resourced farms. This results in an inability to update the research portfolio and a strong belief by employers and farmers that graduates lack sufficient practical skills. There is a lack of updated equipment, knowledge of how to properly run a lab and maintain equipment, what the appropriate tests are, and how to read test results. These issues are resulting in an inability to modernize the research focus. A lack of laboratory and field infrastructure and materials has a direct impact on the ability of faculty to implement practical skills training. In cases where the faculty have received laboratory and field training, this has frequently been done overseas in institutions with significantly more advanced procedures and equipment. When the faculty return to Nepal, they are unable to replicate these skills without the equipment on which they learned, and they are lacking in ideas on how to modify what they have learned to the local context.

Library systems and information technology (IT): There is a lack of sufficient library and information technology systems and limited capacity of the existing staff. This includes infrastructure and materials issues such as adequate computer facilities, high-speed internet, e-library tools, access to academic journals and distance education tools.

Exposure to outside institutions and ideas: There is a general problem in Nepal of a lack of exposure to ideas and institutions outside of Nepal, other than India. The majority of degree holders in the animal sciences, veterinary sciences, and agriculture fields in Nepal have graduated from AFU and/or Tribhuvan University. Because of this, there is a replication of strengths and weaknesses throughout the agriculture and livestock sectors. Some of the issues that the participants attribute to this lack of exposure include a replication of out-of-date research methods, a use of traditional methods over modern methods, a lack of new ideas and innovations, a poor research portfolio, a lack of relationships and collaborations in the wider research community, and a lack of competitiveness for international research funding.



Recommendations

Our HICD team conducted participatory workshops with the faculties from AFU and HICAST to prioritize areas of intervention. These areas of intervention are within the scope and limitations of the Livestock Systems Innovation Lab. The HICD team adds to these recommendations a focus which has consistently been an issue in HICD analyses across our partner countries: *To improve research capacity, organizations must address the linkages and gaps between (a) laboratory infrastructure, resourcing, and management; (b) the skills of the researcher in research design, biostatistics, methods, and analyses (inclusive of modeling); (c) policy and funding mechanisms at the state level; and (d) the research and extension connection.*

Human	<ul style="list-style-type: none">• Improve the capacity of researchers and laboratory technicians to manage a laboratory, appropriately use laboratory equipment, and analyze results from laboratory tests.• Conduct short-term training to improve the research capacity of young faculty, with a particular focus on the “research package” including design, analysis, statistics, modeling, and interpretation; grant and scholarly writing; and modern technologies and innovations.• Update curriculum with innovative teaching and evaluation practices.
Organizational	<p><i>Assist in the development of:</i></p> <ul style="list-style-type: none">• Recruitment and hiring procedures that are grounded in a competitive basis – including for support staff and other human resource personnel.• A contract system with clearly defined job responsibilities and duties.• Processes and transparencies for the application, selection, and allocation of mini-research grants that are sponsored within the university.• A clearly defined promotion system expanding upon the new system and inclusive of teaching faculty, support staff, and other human resource personnel.• Competitive processes in the selection of training participants and for other opportunities.• Develop and implement and processes and opportunities for professional career development for junior faculty.
Environ.	<ul style="list-style-type: none">• Increase the availability of low-cost resources, including assistance with accessing journals and strengthening e-library resources.
