FEED THE FUTURE INNOVATION LAB FOR LIVESTOCK SYSTEMS

HICAST Human and Institutional Capacity Development Gap Analysis

Summary Report and Recommendations for Work Plan and MOU Development

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Abbreviations

AET	Agricultural Education and Training
AFU	Agriculture and Forestry University
AOI	Area of Inquiry
ASF	Animal Source Food
CCT	Cross-cutting Theme
CDAIS	Capacity Development for Agricultural Innovation Systems
DDC	Dairy Development Corporation
DFTQC	Department of Food Technology and Quality Control
DLS	Department of Livestock Services, Nepal
DOA	Department of Agriculture, Nepal
DOC	Department of Cooperative
FAO	Food and Agricultural Organization of the United Nations
HCD	Human Capacity Development
HICAST	Himalayan College of Agricultural Sciences and Technology
HICD	Human and Institutional Capacity Development
HKI	Hellen Keller International
HI-N	Heifer International, Nepal
IAAS	Institute of Agriculture and Animal Science
ICD	Institutional Capacity Development
ICIMOD	International Centre for Integrated Mountain Development
IDE	International Development Enterprises
IFAS	Institute of Food and Agricultural Sciences
ILRI	International Livestock Research Institute
INGO	International Non-Governmental Organization
MOLD	Ministry of Livestock Development
MOU	Memorandum of Understanding
MSU	Michigan State University
NARC	Nepal Agricultural Research Council
NDDB	National Dairy Development Board
NGO	Non-Governmental Organization
NVA	Nepal Veterinary Association
OCD	Organizational Capacity Development
PU	Purbanchal University
PPP	Public Private Partnership

TAP   Tropical Agriculture Platform
TITI   Training Institute for Technical Instruction
UF   University of Florida
UNDP   United Nations Development Program
USAID   United States Agency for International Development

Contents

Introduction

The U.S. Agency for International Development (USAID) awarded the University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) funds to establish the Feed the Future Innovation Lab for Livestock Systems. This five-year initiative (October 2015 to September 2020) supports USAID's agricultural research and capacity building work under Feed the Future, the U.S. Government's global hunger and food security initiative. The International Livestock Research Institute (ILRI) is the UF/IFAS partner in implementation of the Livestock Systems Innovation Lab.

The Himalayan College of Agricultural Sciences and Technology (HICAST) is a partner institution for the Livestock Systems Innovation Lab's projects in Nepal in research and teaching capacities. This report is the result of a rapid gap analysis on the human and institutional capacity development (HICD) strengths and weaknesses of HICAST as providers of manpower, education, and research in livestock systems. The rapid analysis included in-depth interviews and focus groups with stakeholders internal to and external to HICAST. Interview and focus group questions investigated the strengths and weaknesses of the college at the individual, organizational, and enabling environment levels. These questions were intended to determine the training needs for improving research and teaching in livestock systems as well as the blockages within the organization and environment to effective research and teaching. After conducting the gap analysis, the HICD team presented the results to HICAST and facilitated a participatory workshop to discuss the results and prioritize the capacity development gaps for potential collaboration between the Livestock Systems Innovation Lab and HICAST.

This report provides an overview of the Livestock Systems Innovation Lab's capacity development approach, the results of the rapid gap analysis, HICAST's prioritization of capacity development gaps and suggested areas of intervention, and recommendations for next steps in the development of a scope of work (SOW) and memorandum of understanding (MOU) between the Livestock Systems Innovation Lab and HICAST. This report, with the feedback from HICAST, the Livestock Lab, and USAID will be the basis of the SOW and MOU.

Livestock Systems Innovation Lab Capacity Development Approach

The USAID framework for HICD, as well as other newer models for HICD, emphasizes the connection between building the capacity of an individual and organization, and systemic change at the institutional and enabling environment level. Human capacity development can only function for the growth of the individual, organization, and institution when newly acquired skills are supported by infrastructure, resources, policies, and the capacity to change and adapt.[1,2] As such, in-depth analyses of human and organizational capacity, institutional gap assessments, and collaboration with key stakeholders must be conducted to fully address HICD needs. These efforts must align with organizational needs and abilities and use an iterative and collaborative process. [3,4,5] For the purposes of this project, the following definitions will clarify our objectives and activities in terms of capacity development. Figure 1 shows the relationship between individuals, organizations, and the enabling environment.[6]

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[1] Jones, K., Rojas, C., and Gill, T. (2015). Degree training and curriculum development to support HICD: Good practices from USAID Collaborative Research Support Programs and Feed the Future Innovation Labs for Collaborative Research. Blacksburg: InnovATE.

[2] USAID. (2014). African higher education: Opportunities for transformative change for sustainable development. Washington, D.C.: USAID.

[3] Ibid. ones, K., Rojas, C., and Gill, T. (2015).

[4] USAID. (2010). Human and institutional capacity development handbook. Washington, D.C.: USAID.

[5] Ibid. USAID. (2014).

[6] FAO. (2016). Common Framework on Capacity Development for Agricultural Innovation Systems: Synthesis Document. Tropical Agriculture Platform. Rome.

The individual (human) level: the skills, experience, and knowledge that allow individuals to perform. Access to resources and experiences that develop individual capacity are shaped by the organizational and environmental factors in which the individual operates, which in turn are influenced by the degree of capacity of the individual.[7,8]

The organizational level: the internal structure, policies, and procedures that determine an organization's effectiveness.[9] This includes support systems (fiscal, human resource, technical), incentive systems, and organizational goals and plans that influence an individual's ability to perform.[10,11]

Figure 1: Three types of capacity development

The enabling environment level: the broad social system within which individuals and organizations function, including the rules, laws, policies, power relations, and social norms that govern civic engagement.[12,13] The enabling environment involves how human capacity functions within the organization and the environmental system that surrounds it.[14,15] These connections extend to external institutions such as government, civil society, the private sector, and the larger cultural system.[16]

Institutional arrangements: the policies, practices, and systems that allow for the effective functioning of an organization or group. This includes policies and laws, the legal environment, terms of contracts, and informal rules such as codes of conduct and generally accepted values.[17,18]

The Livestock Systems Innovation Lab HICD plan is built on a rationale that: *Strong, knowledgeable livestock systems scientists and researchers, along with effective and competent institutions, are essential for the development of agricultural innovation systems and specifically, livestock innovation systems.* To that, we add that an *enabling environment (innovation policies and investments, agricultural policies and educational policies) that encourages and permits innovation is just as important.* Figure 2 below shows a conceptual model of our Theory of Change and the interactions between human capacity, institutional capacity, and the enabling environment.

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[7] Ibid. FAO, (2016).
[8] UNDP (2009). Capacity development: A UNDP primer. New York: United Nations Development Programme.
[9] Ibid. UNDP (2009).
[10] Ibid, FAO (2016).
[11] USAID. (2012). Country systems strengthening: Beyond human and organizational capacity development. Background paper for the USAID experience summit on strengthening country systems. Washington, D.C.: USAID.
[12] Ibid, FAO (2016).
[13] Ibid, UNDP (2009).
[14] Ibid, FAO, (2016).
[15] Ibid. USAID (2012)
[16] Ibid. USAID (2012).
[17] Ibid, FAO (2016).
[18] Ibid. UNDP (2009).

Enabling environment
- Formal and informal systems that influence capacity identified
- Policies, processes, and procedures that block human and institutional capacity identified
- External influences such as culture, government, and society identified
- Training to raise consciousness and awareness of enabling environment issues conducted
- Activities aim towards reducing environmental blockages and gaps

Human capacity
- Based on performance assessments
- Systematic & targetted portfolio of training
- Skills development based on organizational needs
- Results at organizational level
- Instructors trained
- Manual & curriculum developed
- Follow up & performance-based evaluation
- Activities focus on filling all capacity gaps at an institution (not just academic & research)

Institutional capacity
- Gaps in academic and research capacity filled
- Gaps in support system capacity filled (fiscal, technical, leadership, administrative, etc.)
- Systems and processes included in gap analysis and strengthening activities
- Institutional blockages removed
- Processes streamlined
- Policies changed
- Academic and research capacity strengthened
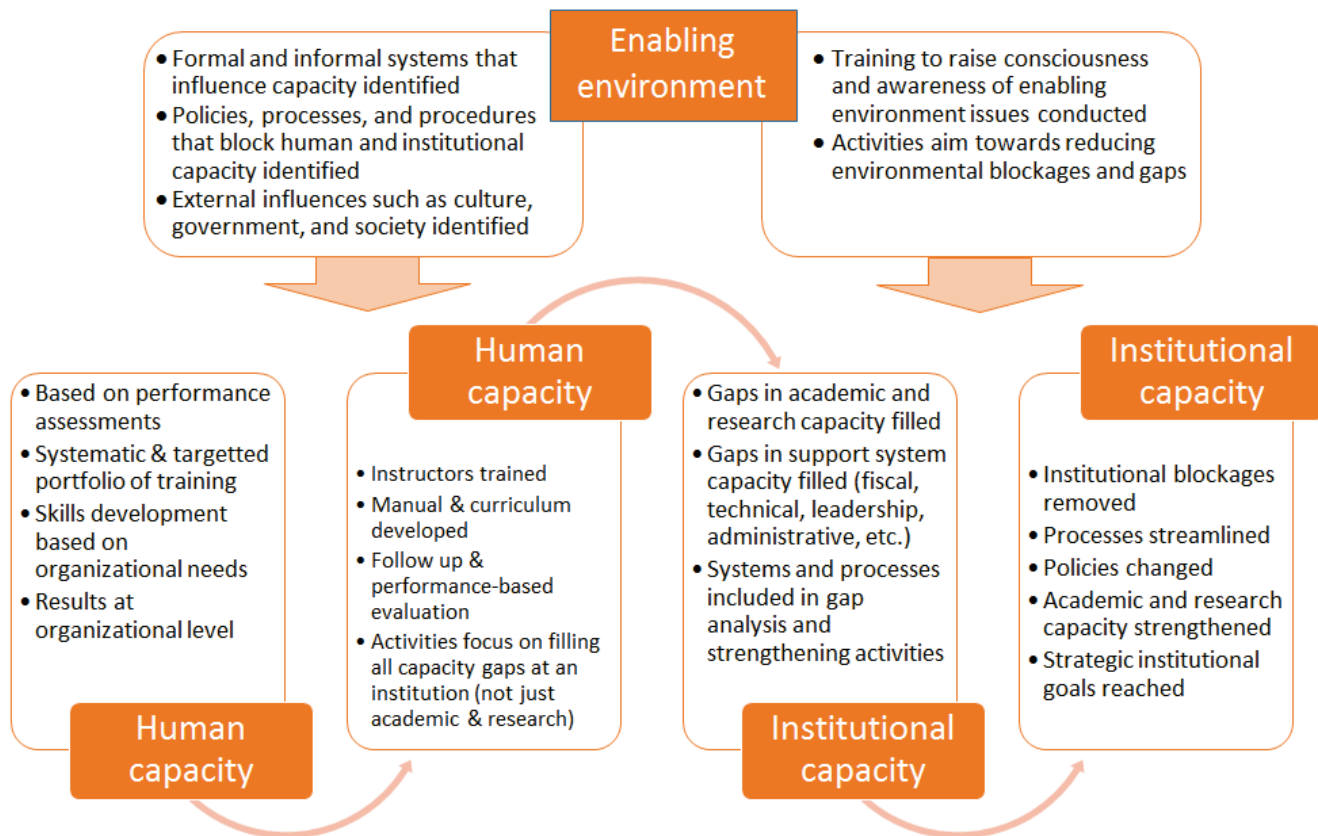- Strategic institutional goals reached

Figure 2: Conceptual Model of HICD Theory of Change

After a close examination of the recent capacity development literature and documentation, we focused our core HICD efforts on Agriculture Education and Training (AET) institutions that are partnering with the Livestock Systems Innovation Lab to conduct research as:

- AET institutions have both faculty and students who are conducting research in animal source food (ASF) systems.
- The focus of AET institutions on faculty and students will lead to longer-term sustainability of HICD efforts and other research investments, as students move from the AET organizations into research, government, extension, and various roles in ASF value chains.
- Many AET institutions have partnerships with government research institutions. Inclusion of these institutions in key stakeholder interviews/focus groups will allow the HICD team to evaluate the working relationship between both AET and government-based research institutions, and explore avenues to strengthen research collaboration through HICD activities.
- Many AET institutions are positioned to be focal points for current and/or future human capacity development such as professional development training and skills updating, across ASF institutions, including public, private, and extension systems.

With these issues and priorities in mind, the Livestock Systems Innovation Lab HICD team proposed a phased process that will focus on capacity development efforts with partner AET organizations through:

a. Identifying and filling the human and organizational capacity related gaps in target Livestock Systems Innovation Lab partner institutions that align with the priorities of lab Areas of Inquiry (AOIs), cross-cutting themes (CCTs), and sub-awardees.

b. Attuning to institutional arrangements and the enabling environment in which the Livestock Systems Innovation Lab efforts are operating, and collaborating with governmental, non-governmental, and private organizations to provide recommendations to strengthen institutional arrangements and establish a positive enabling environment. We plan to collaborate with partner institutions and their stakeholders to ensure that they are an integral part of the HICD planning process and activities.

In Nepal our HICD efforts will focus on HICAST as a key partner. The Agricultural and Forestry University (AFU), as the primary provider of livestock related manpower in Nepal, will also be a Livestock Systems Innovation Lab partner for HICD efforts. The Nepal Agricultural Research Council (NARC) and the National Animal Science Research Institute (NARSI) are considered strategic partners and will be considered for HICD efforts when their needs align with the activities targeted to HICAST and AFU.

Data Collection and Analysis

Data collection took place over two time periods. In December of 2016 the HICD team conducted a one-day workshop at HICAST to identify the strengths, weaknesses, opportunities, and challenges/threats facing the organization. The workshop also included identification of key relationships within and external to the institution and future visioning to identify the long-term goals of the organization. The results of this workshop are presented in Appendix A: Initial HICAST Gap Finding Workshop Results, 2016. In December of 2017 the HICD team returned to Nepal and used the 2016 results as the basis of a full gap analysis. Data collection included in-depth interviews and focus groups internal and external to HICAST. This included NGOs, government agencies and ministries, and community representatives from farms and cooperatives. These data were analyzed using thematic analysis and the results were presented to HICAST in a follow-up workshop. In this workshop, the participants discussed the results of the gap analysis and prioritized areas of intervention.

In total, 23 people from HICAST participated in the workshop, including the primary administrative decision-makers and representatives from the board of directors. The representation at the participatory workshop was diverse including participation from HICAST administration (30% of participants), senior and adjunct faculty (30% of participants), junior faculty (25% of participants), and students (15% of participants). The data from the workshop are available in Appendix E: Full Gap Analysis and Priority Setting Workshop Results.

The results of the analysis and workshop and the subsequent suggestions from HICAST are discussed below.

Rapid Gap Analysis Results

While the focus of this report is on the capacity development gaps at HICAST, it is important to state that the interview, focus group, and workshop participants had many positive comments about the organization and the workforce that they produce through the various degree programs offered. Some of the overall positive comments about HICAST include:

- HICAST is filling a gap in workforce development and manpower that cannot be fulfilled by AFU alone.
- The graduates from HICAST are seen as equally competitive as students graduating from AFU.

- The instructors come from a wide variety of backgrounds and are highly experienced in their fields. They bring real world experiences into the classroom.
- HICAST is making efforts to grow the existing infrastructure of the organization, most recently building a veterinary teaching hospital.
- While HICAST is significantly lacking in infrastructure, the organization has established MOUs with other organizations in the country to fill some of the resource gaps. For example, HICAST uses the laboratories at NARC.
- The location in Kathmandu makes it accessible for local students who can stay home with their families rather than having to stay in student housing.

The data collected during the rapid gap analysis are presented in the following appendices:
- Appendix B: HICAST Livestock Systems Capacity Rapid Gap Analysis - Table
- Appendix C: HICAST Livestock Systems Capacities Rapid Gap Analysis Flowchart
- Appendix E: Full Gap Analysis and Priority Setting Workshop Results

The results are organized in terms of the human, organizational, and enabling environment gaps. It is important to note that there are multiple overlaps between these levels of capacity development. Figure 3 shows a flowchart of how the capacity development gaps link to one another through the individuals, organization, and enabling environment.

Human Capacity

1. ***Develop instructor laboratory and other practical skills***: Overall, the perception is that the curriculum is rigorous and competitive, particularly regarding theory. The area of curriculum that participants are concerned with is in laboratory and practical skills. While the textbooks and curriculum do address these skills, the faculty does not have the capacity to implement practical training. 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. This is also an issue at AFU and NARC, where the majority of degree holders have graduated from HICAST and/or AFU. Over time, this has resulted in a general deficiency in this area. It is also important to note that beyond the capacity of the instructors, 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 are lacking in ideas on how to modify what they have learned to the local context.

   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, and how to interpret the data. In some cases, the faculty state that while there is basic equipment available through the MOU with NARC, there is a lack of knowledge of how to use the existing equipment and how to interpret laboratory results.

2. ***Updating of faculty knowledge***: There are limited opportunities for faculty to update their knowledge. This issue trickles into curriculum reform where there are some complaints that the curriculum is not up-

to-date with new changes in agriculture, and livestock systems. However, this issue is more complex than simply updating faculty knowledge as the curriculum is set by Purbanchal University[19]. Every five years HICAST does go through a curriculum reform process under the auspices of Purbanchal University. The last set of curriculum updates was conducted in 2017.

As of the writing of this brief, HICAST has received little to no support from the government, NGOs and INGOs, or other organizations who provide training to update knowledge or to develop new skills. The administration and faculty largely attribute this to the private nature of HICAST, which is overlooked for assistance in favor of the public university, AFU.

Generally in Nepal, there exists a barrier to the updating faculty knowledge due to a 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 to the senior faculty rather than the junior faculty. The result of this is that those who have received updated knowledge and training are largely administrators who do not conduct teaching or research or 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 at all universities and research institutions in Nepal. However, as HICAST has not yet received training support, this should be considered a potential barrier rather than a current barrier.

3. *Development of faculty to a mandatory education level*: Many of the young and junior HICAST faculties do not hold a masters or doctorate degree. Many of those who do hold advanced degrees are nearing retirement. This gap of mid-career, mid-level academics is common globally. As such, the development of full-time faculty up to a minimum mandatory education level is a priority stated by HICAST and other stakeholders for the long-term sustainability of the institution. This issue also prevents the institution from offering a wider suite of advanced degree programs to prospective students. There are also issues with knowledge and skills gaps with bachelor's degree holders serving in a teaching capacity for other bachelor's degree students.

4. *Pedagogy*: The quality of education and teaching practice varies widely. There are faculty that only hold a bachelor's degree who are teaching other bachelor's degree seekers. On the other end of the spectrum are senior faculty (primarily adjunct) who are highly experienced and hold past or current jobs with various government agencies including NARC, AFU, MOLD, and DLS. Among all of the faculty – junior, adjunct, and senior- students report some faculty who are highly engaging, responsive, and skilled educators, and others that rely solely on PowerPoint and exams. There are also 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.

5. *Paper grades versus knowledge*: Many students feel that their skills sets are over-represented by the high grades that they receive. This leads to concerns about the ability to do their jobs effectively when they leave HICAST and enter the workforce. There are several reasons for this issue. The first and perhaps most challenging is the form of exams themselves. The exam questions are set by Purbanchal University and are

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[19] 1. HICAST is a Purbanchal University (PU) affiliated independent college. PU is a public university with an academic council which approves curricula, and an examination board which sets exam questions and ensures the quality control of exams. HICAST can suggest curriculum developments and changes, but any adoption of changes is decided upon by PU. HICAST runs internal theory, examinations, projects, and thesis evaluation under the guidelines of PU. AFU is an independent university which can develop its syllabi like PU.

seen by students as simplistic, outdated, or using ineffective methods of evaluation. Another issue is a "teach to the test" mentality employed by some of the instructors that leads to students passing their exams but feeling as if they only have theoretical knowledge.

6. ***Research focus****: As with many education institutions in Nepal, there is little focus on research at HICAST, although the organization does plan to increase their research focus in the long-term. As many of the faculty, particularly permanent and adjunct faculty, have other positions that do focus on research, there is little incentive to have that work fall under HICASTs umbrella. For example, many of the HICAST faculty are current or former government employees with NARC, AFU, MOLD, and DLS. The current contract system that HICAST uses to employ junior faculty typically spans a semester, six months, or one year. These contracts are primarily as technical teaching staff. As the contracts are short and teaching-focused, very few of the junior faculty participate in research. Similar to other issues between the junior and senior faculty, this is resulting in significant knowledge gaps between the retiring faculty and the young faculty. It is also resulting in high turnover of young faculty. Faculty do not have funding support for research (including a lack of government support) and are not evaluated on research outputs or activities.

7. ***Community development and training****: Currently, HICAST does not have a community outreach strategy in place. The outreach that is conducted is extension-related based on a fee structure. This enables HICAST faculty to conduct extension work as a funding mechanism for the college. As HICAST receives no government funding, this is one area where the college recuperates costs. Beyond the pay-for-services extension activities, there are no formal strategies for collaborating or communicating with the public. As such, communities, cooperatives, farms, and related organizations perceive that there is little involvement from HICAST beyond student internships and site visits. In the case of students, 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 if it is the results of a study conducted during an internship. Currently, this is not taking place resulting in a growing sense of frustration with the college. The community would also like to see HICAST become more involved with direct training on subjects such as husbandry, nutrition, farm management, value addition, and similar basic practices.

A similar issue presented by the community and the students is a sense that students show hesitation or feel unprepared for working within different cultural contexts. This includes issues of communication skills, working with communities collaboratively, and the local contexts regarding gender, religion, ethnicity, and class.

Organizational Capacity

8. ***Collaboration and communication between HICAST and the organizations with whom they collaborate***: Because of the lack of adequate resources at HICAST, particularly regarding field sites, the institution depends heavily on collaboration with outside individuals and organizations to conduct their teaching and research activities. The administration and faculty at HICAST have made efforts at establishing these relationships in order to fill the gaps in the institution. However, despite these efforts, poor collaboration and communication between HICAST and collaborating institutions was a major theme throughout the participatory activities. There are an insufficient number of MOUs and similar official linkages between HICAST and other institutions, including value chain stakeholders and donors. There is also an absence of feedback from collaborators and key stakeholders. The participants identify a need for more

collaboration for access to laboratories and farms and a need for improvement in communications strategies and systems.

9. ***Policies and procedures including merit-based evaluation and incentive systems***: Several policies and procedure issues directly affecting the capacity of the faculty.

Strategic Planning: During the 2017 focus group with HICAST administration and the participatory workshop, the HICAST administration informed the HICD team of an internal gap analysis and subsequent beginnings of a strategic plan to address these gaps. At the time of the writing of this report, the HICAST report was still in process and unavailable to the team. Many of the issues regarding policies and procedures will require a strategic planning process, which is currently in an unclear state at HICAST.

Promotion: The current system of promotion in Nepal generally, is based on age and number of years at an institution. This creates an overall sense of frustration among young faculty and dis-incentivizes them from participating in activities, such as research, that are not required. It also creates a system of "coasting," where some faculty put forth little effort in their job versus others who put forth great effort but are not rewarded for doing so. Coupled with this is the issue of contracts that are lacking specific and measurable job responsibilities.

Contract system and job responsibilities: As HICAST is a private college and has no government funding, it heavily relies on adjunct faculty as well as young faculty. This is typically done under a contract system that can be as short as single semester, six-month, or one-year contracts, as noted above. This creates a few issues for HICAST. The first is instability in fulfilling the demands for training and the syllabi, due to ever changing faculty. The second is a sense of instability among the young faculty who do not feel incentivized to stay at the university and thus are constantly looking for their next job opportunity. This is despite the feeling among many young faculty that they would like to stay at HICAST and would if they had longer and more stable contracts. A third issue is that even though there are contracts, they do not specify the job responsibilities adequately. This leads in to the issues of promotion and the overall sense of instability that is motivating young faculty to leave the college.

Selection for training: A direct blockage to the development of young faculty is an informal system of selecting people to attend training based on seniority. This includes the selection of permanent and adjunct senior faculty over contract and adjunct junior faculty. This results in older, more experienced faculty being selected for training, even when they may not be teaching or conducting research (such as administration), or are nearing mandatory retirement. This is resulting in a growing skills gap between senior and junior faculty as well as a sense of frustration for young faculty who are seeking to build their skills. As noted above, HICAST has not been supported in capacity development efforts. As such, this issue should be considered a potential blockage rather than a current issue.

An important point brought up by the HICAST administration is the challenge of retaining faculty who have received advanced training. This will be discussed further in the section on job stability.

Incentives for research: Currently at HICAST, research is not a primary focus of the college. During the participatory workshop, the HICAST leadership indicated that this is an area that they are strategically planning to improve. However, there are no incentives for research such as small grants, time allocation, or

reward for research and publication. This is largely due to budgetary constraints as HICAST is a private institution that is not supported financially by the government to conduct research.

Teaching evaluations: At HICAST as well as other teaching institutions in Nepal, a system of teaching evaluation is currently not in place. This includes evaluation of the syllabus and evaluation of the instructor. This results in students having no feedback mechanism for the instructor or college. In addition, teaching faculty are not evaluated based on their teaching practice, but as discussed above, on number of years alone.

Transparency: The final policy issue is a lack of overall transparency in processes and procedures. Many of the decisions that are made within the college come down from the administration level with little or no input, feedback, or communication with the faculty and staff. This issue spans promotion, hiring and firing, incentives, and more. Similar to the above discussed process issues, this leads to faculty feeling as if they have no power, no incentives, and low trust with the college. It is important to note that similarly to other issues of organizational management, this is a common issue across Nepali education and research institutions.

10. ***High dependence on contract faculty and irregular calendar practices***: HICAST is highly dependent on adjunct contract faculty in order to provide a competitive education and a manageable fee for the students. HICAST is dependent upon student fees and share capitals to run the college. However, the high dependence on adjunct contract faculty is resulting in a highly irregular calendar. A "semester" can span anywhere from a few weeks to nine months. In one case, an entire syllabus was reportedly taught in a single day. This is due to the time constraints of the adjunct instructors themselves, who teach when they have free time – such as holidays and weekends. The end result is inconsistency in the course calendar, programs lasting five years instead of four as students try to fulfil their syllabi with absent professors, a sense of lack of communication between instructors and students, and gaps and inconsistencies in the syllabi being taught.

11. ***Weak linkages to the community***: A frequent issue reported in the community (farms, cooperatives, NGOs) are weak linkages between HICAST and the community. While students do participate in internships in the community, the overall sense of the community is that they are unable to perform well due to a lack of practical skills, and there is frustration that students are not required to return to the communities and farms to return the results of their work. In addition, the community would like to see HICAST more involved in conducting basic trainings such as farm management, animal husbandry, animal nutrition, and other basic skills. This latter issue is seen by HICAST as largely budgetary, as they are not supported by the government or outside funders to conduct outreach. HICAST does conduct some limited extension on a fee-for-service basis which allows for some cost recovery and financial assistance to the college.

Enabling Environment

12. ***Morale, particularly among young faculty***: Poor morale at HICAST was discussed throughout the participatory activities. The issues with morale include lack of resources, lack of support and motivation to conduct research, lack of encouragement and mentorship from experienced and senior faculty, a poor political environment both within and external to the university, and a general sense of passiveness and powerlessness by the faculty. The lack of distinct job descriptions including time allocation to research and teaching, monitoring and evaluation of faculty performance, and reward systems for performance all directly impact faculty morale. As the faculty are not rewarded by performance, but rather by years of employment,

there is little incentive for faculty to perform well. Additionally, the lack of job descriptions with specific time allocations for research and teaching dis-incentivizes faculty from conducting research, as their priority becomes the immediacy of teaching responsibilities. HICAST also faces a challenge in that government jobs are often preferred over jobs in private organizations, which leads to attrition from the faculty who move into positions at AFU, NARC, or with the government. This issue combined with those listed above create a challenge for HICAST to retain young faculty.

13. *Understanding cultural norms and differences*: HICAST currently teaches a course in the sociological aspects of livestock systems such as extension, gender, and cultural issues. However, this class does not have a practical component and students feel unprepared to work with communities within the localized contexts of gender and cultural norms. Similarly, students feel unprepared to effectively communicate and collaborate with farmers.

14. *Infrastructure and material resources*: It is widely known that HICAST is lacking in infrastructure and material resources including laboratories, farms, and classrooms. This results in an overall sense that HICAST graduates lack sufficient practical skills, and also results in some struggles over use of the classrooms that exist. Students report at times spending up to two or three hours waiting for a classroom so that their instructor can hold class. Students also report a lack of spaces for them to study individually, and that the existing buildings that are owned by HICAST are not well maintained by the support staff.

HICAST is making efforts to acquire or build the infrastructure that they require. Most recently they have acquired a new classroom building with 34 rooms and have purchased properties to develop teaching farms.

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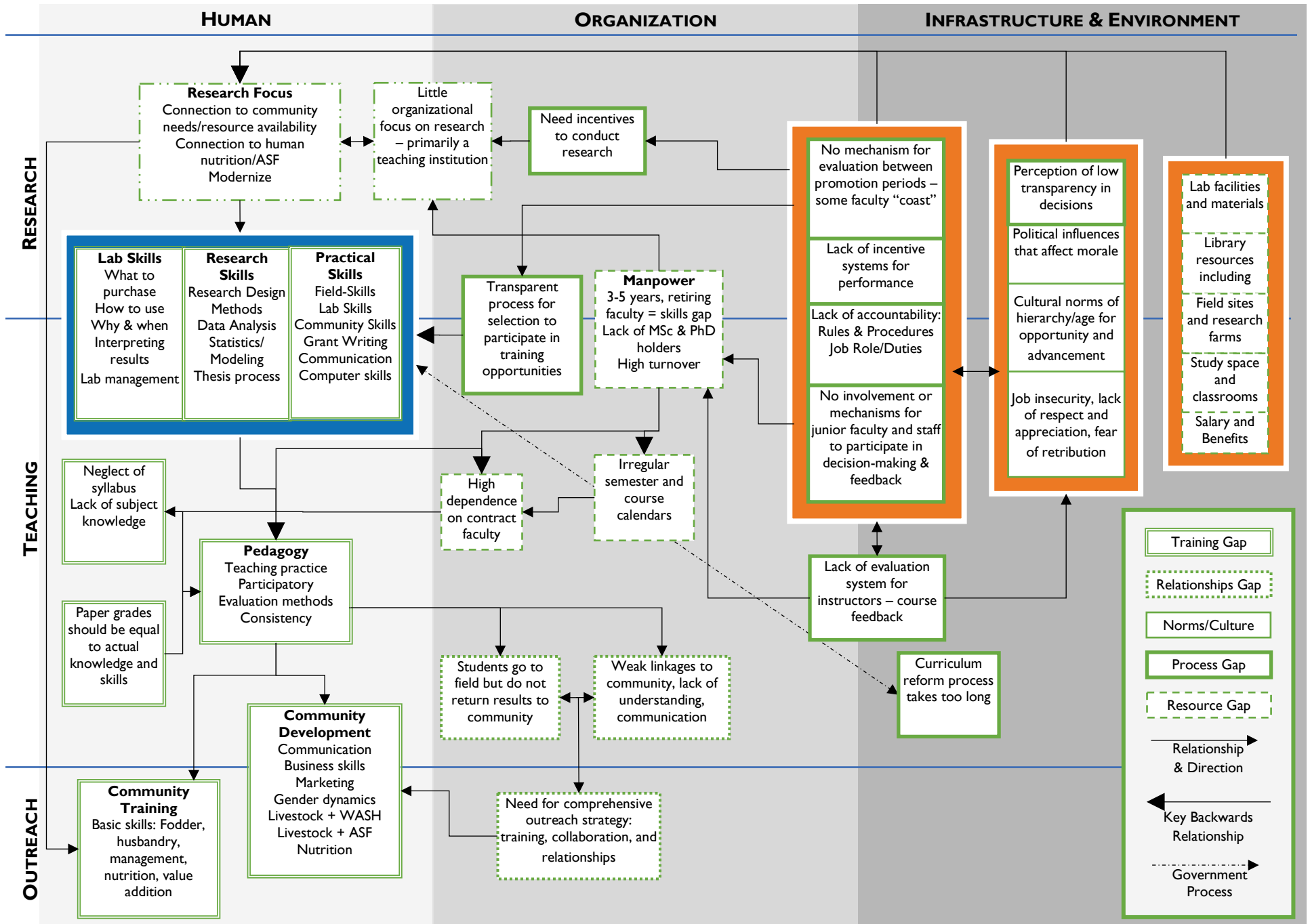
HUMAN

ORGANIZATION

INFRASTRUCTURE & ENVIRONMENT

RESEARCH

Research Focus
Connection to community needs/resource availability
Connection to human nutrition/ASF
Modernize

Little organizational focus on research – primarily a teaching institution

Need incentives to conduct research

No mechanism for evaluation between promotion periods – some faculty "coast"

Lack of incentive systems for performance

Lack of accountability: Rules & Procedures Job Role/Duties

No involvement or mechanisms for junior faculty and staff to participate in decision-making & feedback

Perception of low transparency in decisions

Political influences that affect morale

Cultural norms of hierarchy/age for opportunity and advancement

Job insecurity, lack of respect and appreciation, fear of retribution

Lab facilities and materials
Library resources including
Field sites and research farms
Study space and classrooms
Salary and Benefits

Lab Skills
What to purchase
How to use
Why & when
Interpreting results
Lab management

Research Skills
Research Design
Methods
Data Analysis
Statistics/ Modeling
Thesis process

Practical Skills
Field-Skills
Lab Skills
Community Skills
Grant Writing
Communication
Computer skills

Transparent process for selection to participate in training opportunities

Manpower
3-5 years, retiring faculty = skills gap
Lack of MSc & PhD holders
High turnover

TEACHING

Neglect of syllabus
Lack of subject knowledge

High dependence on contract faculty

Irregular semester and course calendars

Lack of evaluation system for instructors – course feedback

Pedagogy
Teaching practice
Participatory
Evaluation methods
Consistency

Paper grades should be equal to actual knowledge and skills

Students go to field but do not return results to community

Weak linkages to community, lack of understanding, communication

Curriculum reform process takes too long

OUTREACH

Community Development
Communication
Business skills
Marketing
Gender dynamics
Livestock + WASH
Livestock + ASF
Nutrition

Community Training
Basic skills: Fodder, husbandry, management, nutrition, value addition

Need for comprehensive outreach strategy: training, collaboration, and relationships

Training Gap
Relationships Gap
Norms/Culture
Process Gap
Resource Gap

Relationship & Direction
Key Backwards Relationship
Government Process

Figure 3: HICAST Livestock Systems Capacities Rapid Gap Analysis Flowchart

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HICAST HICD Priority Setting Workshop Results

The suggested areas for collaboration identified by HICAST during the participatory workshop are provided below. These suggestions will form the basis of the work plan going forward, though it will be necessary to explicitly define and narrow the scope of some of the suggestions. Any items related to infrastructure are *outside of the scope of the Livestock Systems Innovation Lab and are noted by astericks(*)*. Some of HICAST's suggestions below will likely be *outside of the budget of the HICD team and are noted by double astericks(**)*. They are nevertheless included below as identified areas of priority from the organization(s). The representation at the participatory workshop was diverse including participation from HICAST administration (30% of participants), senior and adjunct faculty (30% of participants), junior faculty (25% of participants), and students (15% of participants). In total, 23 people from HICAST participated in the workshop, including the primary administrative decision-makers and representatives from the board of directors. The data from the workshop are available in Appendix E: Full Gap Analysis and Priority Setting Workshop Results.

Four priority gap areas were identified and suggested by HICAST for potential collaboration:

1. **Quality of education**
   HICAST suggests that quality of education is one of the areas that should be prioritized for collaboration between HICAST and the Livestock Systems Innovation Laboratory HICD team. This includes improving the curriculum for students – particularly regarding the practical aspects of training that is widely seen as lacking throughout all institutions (including AFU, NARC, and NASRI). Improvement in teaching practices was identified as an area of need. Increasing the availability of certain resources within lab's scope such as assisting in acquiring access to international journals was requested to strengthen the weak overall access to resources. Finally, motivation and incentive systems related to teaching are lacking including promotion systems based on merit, evaluation of instructors, and motivation to attend and implement training. The workshop participants viewed this as a major barrier to improving the overall teaching capacity of the institution. The areas of collaboration suggested by HICAST include:
   A. Update curriculum with innovative teaching and evaluation practices
      - Develop Purbanchal University's capacity to reform curriculum and innovative exam and evaluation methods (note – Purbanchal University sets the curriculum for HICAST)
      - Promote case-based education and curriculum development
      - Update syllabi with new information and research results,– increase responsiveness to curriculum development requests
      - Improve pedagogy and teaching practices
      - Knowledge transfer and experiencing sharing from UF
      - Training/continuing education for faculties
      - Capacity building for effecting teaching and learning processes (pedagogy) to faculties
      - Capacity building in making effective session plans
   B. Increase the availability of low-cost resources including assistance with accessing journals and strengthening e-library resources
      - Exposure to guest lecturers
      - Access to latest updates national/international scientific journals\
      - *Strengthen e-library facilities*

- **Adequate infrastructure (lab, library, field transportation)*
- ***Establish MOU with NARC/DLS and other stakeholders for undertaking research*
- ***Faculty exchange*

C. Create, implement, and monitor processes and procedures related to the retention and promotion of skilled faculty
- Retention systems for skilled, qualified, and experienced teachers
- Teaching evaluations implemented including evaluation as to if the syllabus was fully covered
- Motivation systems and transparent/competitive selection processes for participation in training – Department-wise training should be encouraged

2. **Inadequate Clinical Practices and Laboratories**
Lack of clinical and other practice infrastructure is significantly lacking at HICAST. This need is typically fulfilled by renting the services of NARC laboratories. However, this is insufficient to meet the demand for laboratories. Lack of access to clinical hospitals, field sites, farms, and other infrastructure-related issues are major barriers in the organization. Unfortunately, this is outside of the scope of the Livestock Systems Innovation Lab project. However, there is potential to assist HICAST with management of existing laboratory facilities as well as training on what equipment to use, why, and types of analyses that could be conducted. The areas of collaboration suggested by HICAST include:

A. Improve the capacity of researchers and laboratory technicians to manage a laboratory, appropriately use laboratory equipment, and analyze results from laboratory tests
- Research capacity building for faculty and resource persons
- Skill development for running a laboratory
- Research-based final semester education
- Diagnostic and surgical training
- ***Exposure to researchers and systems external to Nepal*

B. ***Develop research infrastructure*
- **Well equipped veterinary hospital*
- **Diagnostic training and facilitates*
- **Skilled veterinarian*
- **Plant clinic should be established*
- **Nucleus farm should be developed*
- **Department-wise lab for clinical processes*
- **Establishment of decent lab and community outreach for learning*
- **Research stations within PPP mode*
- **Establish MOU with NARC/DLS and other related institutions for clinical practices*
- **Provide logistics (transportation, etc.) for students*

3. **Job Stability**
While at first glance job stability may seem outside of the scope of the Livestock Systems Innovation Lab, this area along with processes and procedures, are major barriers to both research and teaching capacity at HICAST. As there are no formal evaluation structures other than number of years at an institution, junior faculty have little job stability and high turnover as they leave for more permanent positions. HICAST recognizes that in the long-term this will be detrimental to the organization as the senior faculty near

mandatory retirement. As is discussed above, the cultural preference of government jobs over private sector jobs is an additional challenge for HICAST. The college has expressed concerns in how to provide job stability and support for faculty to stay in the long-term, while also requiring satisfactory job performance.

Some of the challenges include transparency in promotion processes, a lack of a formal evaluation and promotion process, and a lack of rewards and incentives. Currently in Nepal, this is the "norm" across institutions – public and private. HICAST sees collaboration with the Livestock Systems Innovation Lab as an opportunity to be a leader in Nepal for evaluation-based systems. At HICAST specifically, there is also a need for contracts that are longer than one year or one semester and that have clearly outlined and measurable job responsibilities. Collaboration in this area between HICAST and the HICD team would be an initiative and suite of interventions that have not yet been attempted in this area. Improvement in these areas are directly related to the long-term outcome of any training initiative that takes place. See Appendix C: HICAST Livestock Systems Capacities Rapid Gap Analysis Flowchart for how these issues directly connect. The areas of collaboration suggested by HICAST include:

A. Develop, implement, and monitor merit-based performance evaluation and promotion systems including transparencies
- Assist in the development of a system of promotion based on stability and performance
- Assist in the development of bottom-up feedback mechanisms for providing feedback to HICAST administration
- Assist in the establishment of reward and punishment systems (performance evaluation systems) including feedback mechanisms
- Assist in the redevelopment of contracts and contracting processes with faculty and staff to clearly provide job roles and expectations for evaluation mechanisms

B. Develop, implement, and monitor processes and opportunities for professional career development for junior faculty. This is also directly related to processes and procedures discussed below.
- Grant writing training
- Opportunities to receive advanced degree training
- Processes development as a mechanism to upgrade skills – learn from American universities
- Visiting faculty and academic management consultant
- Professional career development

4. **Processes and Procedures**
Similarly to Job Security, various processes and procedures that should be in place at HICAST are inadequate, non-existent, or are not transparent. These processes and procedures lead to an overall poor working environment and sense of distrust between HICAST administration and faculties – particularly junior faculties and students. Several of these areas are directly related to capacity development at the human level including who is selected to attend training or receive professional development opportunities, communication and coordination, development of the academic calendar, and job responsibilities. The areas of collaboration suggested by HICAST include:
- Based on job designation, roles and responsibility should be clear
- Advocacy for implementation of and efficient and effective academic calendar
- Linkage between university and HICAST should be enhanced
- ***Further study opportunities for faculty enhancement should be implemented*
- ***Faculty exchange program with international institutions should be implemented*

Recommendations from the Livestock Systems Innovation Lab HICD Team

The HICD team's approach to HICD is founded on the participation of the collaborating institution. The results of the gap analysis has led to several important areas of intervention that were prioritized by HICAST and outlined above. The HICD team recommends proceeding with the areas of intervention suggested by HICAST with some exceptions related to funding constraints and scope constraints as discussed above. The suggestions from HICAST will be further developed and narrowed in scope during the work plan process. In addition to the HICAST identified areas of intervention, the HICD team suggests the following:

Leadership and Management Training for Administration

As discussed in the gap analysis results, there are several policies, procedures, and transparency mechanisms that are absent at HICAST. This is not limited to HICAST but was commonly discussed during data collection as an issue across other educational and governmental institutions. As such, this is an area of development which will be new in the livestock systems context in Nepal. The lack of these policies and procedures, the sense from junior faculty of job instability, and the overall need to improve the environment at HICAST, are issues indicative of a need for leadership and management training for the HICAST administration. The HICD team suggests collaboration for training on:

- Leadership and communication
- Strategic planning
- Policy development and implementation including transparency
- Monitoring and evaluation of staff and faculty

Potential Overlaps with AFU

Many of the needs at AFU mirror those at HICAST. The differences in HICD are primarily seen at the organizational level as AFU is a public university funded by the government, and HICAST is a private college. These differences bear out in the organizational capacity development needs which are unique to each institution. The human capacity development needs are nearly identical. As such, there are potential synergies and opportunities to conduct training for both institutions. Areas of overlap include:

I.   **Human resource development/strengthening**: This includes improving the knowledge of faculty on areas of weakness including laboratories, pedagogy, and updated professional knowledge. Improvement in teaching practices was identified as an area of need. Training overlaps between HICAST and AFU based on the HICD gap analyses include:
- Laboratory handling for faculties and lab staff
- Pedagogy including effective teaching
- The research "package:" modern research design, data collection and methods, data analysis with a specific emphasis on biostatistics and modeling
- Grant hunting and proposal writing
- Professional trainings on animal infertility, nutrition, disease diagnosis/surveillance
- Animal handling – ethics

II. **Resources**: There are significant resource gaps at both HICAST and AFU. Infrastructure development is outside of the scope of the Livestock Systems Innovation Lab project. Materials development are outside of the budget of the Livestock Systems Innovation Laboratory project, with the exception of some key areas in which the HICD team may be of assistance including:
- Development of e-library materials

- Free journal subscription and access login
- Assistance in the development of distance learning capabilities

Potential Overlaps with NARC/NASRI

NARC/NASRI have similar needs regarding human capacity development as HICAST and AFU. This is because nearly all the researchers and educators at AFU, HICAST, and the government including NARC/NASRI have graduated from the same programs at AFU. As such, the capacity development gaps related to training are similar. Whenever possible, NARC/NASRI should be involved in training programs that may be provided to the other organizations. This is specifically regarding:

- Modernized research design
- Data collection and methods
- Data analysis – biostatistics and modeling
- Laboratory organization and management, the skills to use existing equipment, and how to know what equipment should be purchased
- Updating of knowledge – particularly in regard to animal nutrition, fertility, and ASF consumption

Other Stakeholders

Local stakeholders such as private farms and cooperatives state that though there are extension services, they are inadequate. Outside organizations would like to see more involvement from AFU and HICAST in the communities such as through direct training. When appropriate, outside stakeholders should be included in skills training – particularly basic skills development. Requests include farm management, husbandry, nutrition, and ASF development (such as value addition).

Next Steps

Following the rapid gap analysis, priority setting workshop, and report, the next steps will be to engage HICAST in providing feedback on the report to ensure that the HICD team has accurately represented the concerns of the organization in relationship to the capacity development gaps identified. The HICD team will align the priorities suggested by HICAST with the HICD budget, Livestock Systems Innovation Lab goals, and the lab's activities that are taking place in Nepal. This will be the basis of an HICD work plan, activities, and MOU with HICAST. During this process, HICAST and the Livestock Systems Innovation Laboratory HICD team will collaborate to refine the priorities into actionable items as well as to narrow the scope of the areas that are currently not well defined, such as the needs for curriculum development and e-learning.

Livestock Systems Innovation Lab HICD Team

- Develop and disseminate HICD analysis report for feedback from HICAST and Livestock Systems Innovation Lab.
- Revise report and provide final HICD report for HICAST and Livestock Systems Innovation Lab stakeholders in English and Nepali
- Review existing Livestock Systems Innovation Lab work plans for Nepal to identify potential synergies in the activities of AOIs, CCTs, and sub-awardees and the HICD team
- Collaborate with HICAST to define and narrow the scope of activities based on HICAST's suggestions outlined in the gap analysis and develop these activities into an actionable work plan.

- Develop work plan, activities, and budget for Nepal HICD activities for feedback from HICAST, the Livestock Systems Innovation Lab, and USAID
- Develop an MOU with HICAST for HICD activities in collaboration with HICAST personnel

HICAST

- Respond with comments to the HICD analysis report. The Livestock Systems Innovation Lab HICD team requests that at least one administrator with decision-making ability, one senior faculty, and one junior faculty member provides feedback.
- Determine persons at HICAST who will collaborate on the development of a work plan and an MOU. The HICD team requests that at least one junior faculty member participates in the development of the work plan.
- Collaborate with HICD team to define and narrow the scope of activities based on HICAST's suggestions outlined in the gap analysis and develop these activities into an actionable work plan.
- Collaborate with HICD team to develop a work plan, activities, and MOU to fill capacity development gaps

Table 1: Next Steps and Responsibilities

Next Step Activity	Responsible Organization	Date Due	Jan	Feb	March	April
Develop and disseminate HICD analysis report	HICD Team	Feb 1	▨			
Respond to report with comments	HICAST Lab – ME	Feb 15		▣ (blue/orange)		
Revise report and provide final version to stakeholders	HICD Team	March 1			▨	
Review existing Livestock Systems Innovation Laboratory work plans for synergies with HICD	HICD Team	Feb 15		▨		
Determine collaborators on the development of an MOU and work plan	HICAST	Feb 15		▣ (blue)		
Collaborate to define and narrow the scope of activities based on HICASTs identified priority gaps	HICD Team HICAST	Feb 15		▣ (grey/blue)		
Propose work plan, activities, and budget for feedback	HICD Team	Feb 15		▨		
Provide feedback on work plan and activities	HICAST Lab – ME USAID	March 1		▣ (blue/orange/green)		
Revise work plan and activities per feedback	HICD Team	March 15			▨	
Approve work plan and activities	USAID	April 1			▣ (green)	
Develop MOU with HICAST	HICD Team HICAST	April 1		▣ (grey/blue)	▣ (grey/blue)	
Begin HICD activities	HICD Team HICAST	May 1				▣ (grey/blue)

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Appendix A: Initial HICAST Gap Finding Workshop Results, 2016

Current and potential collaborators (alphabetical)

- **AFU**, Agriculture and Forestry University
- **DDC**, Dairy Development Corporation
- **DFTQC**, Department of Food Technology and Quality Control
- **DLS**, Department of Livestock Services, Nepal
- **DOA**, Department of Agriculture, Nepal
- **DOC**, Department of Cooperative
- **FAO**, Food and Agricultural Organization of the United Nations
- **Farmers Group**
- **HI-N**, Heifer International, Nepal
- **Helvetas**
- **HKI**, Hellen Keller International
- **IAAS**, Institute of Agriculture and Animal Science
- **ICIMOD**, International Centre for Integrated Mountain Development
- **IDE-Nepal**, International Development Enterprises
- **John Hopkins University**
- **Livestock entrepreneurs**
- Livestock Systems Innovation Laboratory
- **Manushi Cooperative**
- **MSU**, Michigan State University
- **Music Nepal**
- **NARC**, Nepal Agricultural Research Council
- **ND's**
- **NDDB**, National Dairy Development Board, Nepal
- **Nepal Horticulture**
- **NVA**, Nepal Veterinary Association
- **PREDICT project**
- **TITI**, Training Institute for Technical Instruction
- **UF**, University of Florida
- **USAID**, United States Agency for International Development
- **USAID – Kisan**
- **Valley Feed**
- **Winrock International**

Current and potential collaborators (by order of importance)

Current	Potential	Least Important or Least Likely
Farmers Groups	Foreign Universities	AFU
DLS	Winrock International	IAAS
FAO	ICIMOD	TITI
Heifer International	DFTQC	NVC
IDE Nepal	USAID	ND's
Michigan State University	PREDICT	USAID-Kisan Project
DOC	FAO	
DOA	DDC	

Institutional Relationships

Connections	Strengths	Gaps	Gap-Filling
• DDC • DLS/DOA/MOLD • FAO • Farmers group & cooperatives • HEIFER • ICIMOD • IDE-NEPAL • Internal Universities – academic and research • NARC • UF • Universities • USAID	• Network throughout country • Qualified manpower • Established labs and resource center • Connection with policy level, NGOs, INGOs, Institutions • Supply of trained/qualified manpower to government • Use of lab, demo farm, clinical cases • Subject based practical exposure • Animal health camp, plant clinic, and subject based training to farmers • Exposure to different organizations for HICD by experts • Experience based teaching methods by experts • Relationship build up (trainings) • Internships (research) • Publications (research) • Production of quality manpower for production of livestock and good nutrition • Good relations with different government and private institutions • Practical field for students • Different training organized • Continuous education training • Earthquake relief • Animal health camp • Birdflu control program • Idea sharing • Extension work • Providing scholarship for DLS/MOAD undergraduates • Linkages to grassroots level	• Insufficient collaborations – especially use of labs/farms • Competent graduate production • Weak follow-up program • Lack of accountability and responsibility • Lack of communication • Use of IT lacking • Minimum use of organizational strengths • Lack of proper coordination with value chain stakeholders • Lack of annual action plan • Lack of specific training for graduating students, ex. computers • Lack of understanding, coordination, resource person, training implementation, needs based trainings, and linkages (training) • Lack of resources, more political influence, support/motivation (research) • Lack of institutional linkages and support (technical) • Information sharing • Lack of government policy to support private institution • Lack of connection to donors • Passiveness from HICAST and faculty • Insufficient communication • Sharing of knowledge like from NARC research findings, DLS data are less • Absence of feedback between collaborators • Scattered of activities and duplication in funding • Capacity building training are less organized by government sector to our institute	• Frequent and scheduled interactions • Strong establishment of faculties, laboratories, outreach farms • Mandatory acceptance of directives of regulatory bodies (NVC & Universities) • Strong collaborative follow up programs • Use of proper guidance for better accountability and responsibility • Introduction and maximization use of communication tools • Creating effective annual action plan for encompassing all areas (ex. organizational strengths) • Providing specific training using experts from organization (proposal and report writing, data analysis, skill-based training) • Sustainable collaboration • Expanding institutional linkages • Private and government partners • Needs assessment before conducting trainings and research • Motivation of HICAST faculty to implement their learned training • HICAST's own development through fund setup for research and training

Rapid strengths, weaknesses, opportunities, challenges/threats analysis

Strengths	Weaknesses	Opportunities	Challenges/Threats
• Own infrastructure with land • Qualified teachers • MOU with GO and NGOs • Competent students enrolled	• Inefficient technical and financial command/general administration • Not sufficient technical department as needed • Insufficient coordination as per MOU	• Possibility of HICAST as private ag university • Enhanced private/commercial farming and services	• Risk of existence if not managed properly • Faculty/department development up to mandatory level (lack of MS and PhD)
• Single private college • Applicable and competitive courses • Wide range of professionals with a lot of field experience	• Revision of course • Insufficient department expertise • Lab facilities • Training • Library facility • Political influence	• Agricultural nation • Student enrollment	• Insufficient funding • Instability (political situation)
• Only one in capital • Experienced faculty • Linkage to concerned stakeholders	• Lack of effective SOP • Inadequate infrastructure • Ineffective/no presence in related events • Proper administration • Less resources in library	• Collaboration partners • Grant making • More programs • Student/faculty exchange	• Unavailability of enough technical manpower • High turnover of technical human resources
• Lab • Manpower • HICAST providing scholarships for bachelors	• Insufficient resources • Lack of coordination • Lack of motivation and encouragement • Relation with stakeholders • Lack of economists • Insufficient technical department	• Publishing research activities • Develop more faculties	• Economic burden to HICAST
• Only one public-private agricultural institute • Well experience and diverse professionals • Good coordination with concerned stakeholders • Publications, thesis	• Insufficient facilities (lab, library, fields) • Communication and coordination gap between admin, faculty, etc. • Continuing education and trainings for faculty and administration	• Huge demand of ag professionals • Huge opportunities for research	• Colleges emerging (AFU, IAAS) • Sustainability of faculties and staffs • Political influence

Future visioning

Current Career Path	Future Career Path	How Institution Should Change/Adapt	How can be Supported
• Abroad for PG and PhD • Government • INGO/NGO • Private • Public/Private (HICAST) • NARC	• Mostly abroad • Extensive research work • Commercial farm enterprise	• Production of exports	• Increased programs (Masters degree, PhD)
• Opportunity of employment in GO/NGO/INGO/private organization • Abroad opportunity to work/stay	• Demand based course design and faculties • Capacity development of the teaching staff as per requirement	• National and farmer's level priority based practical teaching	• Support national/international grant • Demand based research by students
• Government • INGO/NGO • CBOs • Private firms • Academia and research • Abroad (50%)	• Self-entrepreneurship • Consultancy • Cross-cutting area involvement	• Employee motivation • Increase infrastructure and commercial agriculture/ livestock farming, challenge fund • Well-equipped VTH • Increase research and extension program	• Collaboration with private industries, donor organizations • HICD (refresher trainings) • Motivation (handsome bonus, salary, wages)
• Demand is increasing trend • Competitive graduates • Government administration • Brand establishment	• Ability to develop enterprise • Employment opportunities • Further studies	• Awareness • Extend research up t farmer groups • Training and workshops • Develop relationships with different funding agencies • Regular revision of curriculum with demand of the country	• Supportive government policies • Financial support from INGO/NGO • Technical support from different institution, external university, donors
• GOs • Extension • Research organizations • NGO/INGO • Private practice/self-entrepreneurship • Abroad • Academia	• Self-employed • Academia • GO/NGO/INGO/ others • Abroad	• Self-accountability and responsibility towards work • Quality of management people Needs-based course should be developed • Strengthening of infrastructure, lab, library, and IT • Improved facilities • Involvement in research activities • Increased support for gov and NGO activities	• Motivation to faculty/admin through trainings • Outsourcing is required • Public/private friendly policies

Problem solving by priority

		Highest priority problem	Lowest priority problem	Problems HICAST can begin addressing without outside assistance	Problems HICAST can solve with outside assistance
Training	20% or more	• **Faculty, research proposal (30%)** • **Faculty personnel, Vet surgery/ radiology (25%)** • **Faculty Data analysis (statistics) (20%)**	**Librarian, library training (30%)**		• **Faculty personnel, Vet surgery/ radiology (35%)** • **Faculty Data analysis (statistics) (35%)**
	15%	• Wildlife management • Surgery training (for large and small animals) • Lab-based diagnostics training • Admin, good governance	• Clinical treatment	• Faculty, Human resources management • Faculty Technical writing skills	• Surgery training (for large and small animals)
	10% or less	• Training for entrepreneurship • Science business • Admin, IT • Training for research methodology • Poultry production and management • Clinical training	• Science business • Proposal writing • Admin, IT • Admin, academic management	• Extension training • All (admin, faculty, management), organization and management	• Training for entrepreneurship • Proposal writing
Institution	20% or more	• **Equality in contest of salary to other facilities (25%)** • **Participatory and bottom to top approach for taking feedback from the employee and act accordingly (20%)**		• **Field/demand-based teaching approach including revised courses (40%)**	• **Periodic training to faculty members at national and international level by developing linkages (95%)**
	15%			• Revised/formulation of demand-based curriculum in coordination with concerned universities and mandatory institutions (NPC, Ministry (MOLD, MOE, DOL), NVC)	
	10% or less	• Regular interactions with stakeholders and possible donor agencies • Periodic training to faculty members at national and international level by developing linkages • Improvement in academic administration • Faculty meetings • Effective hierarchy system, chain of command, Code of conduct	• Decision-making/Power of attorney • Equality in contest of salary to other facilities	• Effective hierarchy system, chain of command, Code of conduct • Faculty meetings	• Increase in investment for new programs and infrastructures (lab, farm, hospital, academic building)

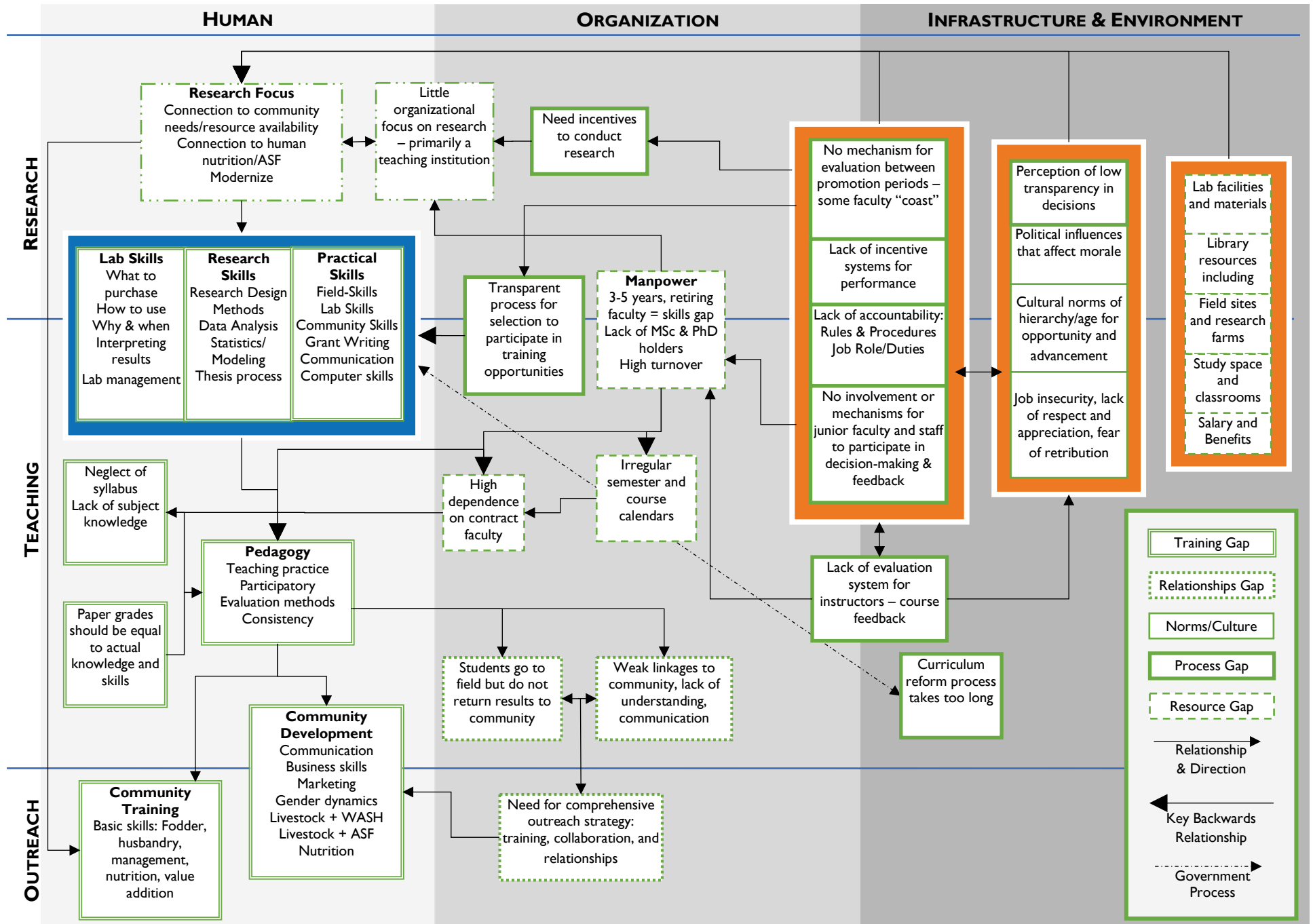|		Highest priority problem	Lowest priority problem	Problems HICAST can begin addressing without outside assistance	Problems HICAST can solve with outside assistance
Environment	20% or more	• **Reduce individual political influences (25%)**	• **Recreational activities (65%)**	• **Reduce individual political influences (35%)** • **Positive environment (20%)**	• **Collaboration with different donors and foreign universities (40%)** • **Infrastructure (farm, hospitals, lab) (30%)**
	15%	• Infrastructure (farm, hospitals, lab)		• Co-ordination • Cafeteria	
	10% or less	• Well facilitated teaching institute buildings • Motivation of employee • E-library enhancement • Collaboration with different donors and foreign universities	• Encouragement by tour, picnic organized • Provision for further education and promotion according to skill	• Self-motivation • Infrastructure (farm, hospitals, lab) • Financial transparency, Budget allocation, Grand making and donors, Land/farm lease • Alumni event • Strengthening of faculty professionalism • Motivation of employee	• Well facilitated teaching institute buildings

Appendix B: HICAST Livestock Systems Capacity Rapid Gap Analysis - Table

	HUMAN CAPACITY NEEDS	ORGANIZATIONAL CAPACITY NEEDS	ENVIRONMENT CONSTRAINTS
Research	*Training Needs* • Modern technologies & innovations (updated) • Laboratory skills: proper use of equipment, which technologies to purchase & why, when to use & why, modern methods & technologies, interpretation of results, lab management • Research design → Data analysis → Statistics/Modeling • Updated research methods • Writing publications *Research Gaps* • Market demands & existing constraints • Gender focused research (due to high male migration) such as goats, less input/time intensive livestock • Animal health & nutrition • *See Country-wide issues for research needs*	*Research Capacity – Organization* • Experienced & senior faculty are retiring – will be a significant skill gap in 3-5 years • Need for more MSc & PhD holders • Selection of appropriate personnel for training: should have a process to select for training based on need/interest/impact • Highly focused on training, weak overall focus on research, particularly faculty who are not working in research outside of HICAST • High faculty turnover *Processes & Procedures – Crosses Research & Teaching Capacity Needs* • Encouragement/incentive systems lacking including for conducting research, good performance, good teaching, etcetera • Lack of confidential means of reporting issues across students, faculty, staff – fear of retribution • Lack of evaluation of teachers with connection to promotion • Junior faculty & technical staffs not involved in any decision-making processes or feedback mechanisms • Staff not following rules & regulations such as office hours, responsiveness, etcetera • Poor communication between admin & faculties • Curriculum reform processes take too long to react to changing situations • Junior faculty & technical staffs not involved in any decision-making processes or feedback mechanisms to HICAST – feelings of powerlessness • Lack of accountability across the all levels • No clear job classifications & duties leading to lack of accountability	*Infrastructure* • Lack of laboratory & lab materials • Lack of field-based infrastructure & materials • Distance between HICAST buildings/properties make use complicated • Lack of library facilities – particularly e-journals & digital resources • Students have no place to study • Classes start late because of having to wait for others to finish using classrooms • Common areas not well maintained • No trash bins, soap, toilet tissue in bathrooms, no separate male & female bathrooms – issue for hygiene & privacy • No water – problem for students at the institution all day, problem for hygiene *Environment* • HICAST not getting invited to trainings & other opportunities open to HICAST & government – need recognition • Job insecurity including contract length, contract terms, lack of confidential processes, fear of retribution, politics, feeling of not being appreciated/respected • Hierarchy mechanisms results in blockages in junior faculty to go into the field, get involved, & get training • Hierarchy mechanism results in the "wrong" people being trained, or people being trained & soon after retiring • Strong political influences within organization that affect morale • Promotion system based on years, not rewarding performance, highly political • Morale depends on the leadership of each unit – positive when non-biased, rules & processes are set, perception of fairness • Fees are high making access to university only available to middle & higher classes • Salary perceived as poor compared to government sector, or perceived as adequate but lacking government benefits
Teaching	*Training Needs – Faculty & Students* • Updated teaching pedagogies & practices – problem-oriented & practical • Biosecurity including WASH relationship to livestock sector • Community development skills: working with communities, communication skills, gender dynamics, & relationship of ASF to human nutrition • Business skills • Perception of significant gaps in practical skills of all kinds: laboratory, fieldwork, community work, etc. • Lack of practical skills in working with communities – gender, culture, attitudes, behavior change, etcetera • Advanced grant writing • Software & computer skills • Thesis process – lack of guidance, particularly at the proposal stage, research design, data analysis • Lack of consistency in grading across courses – particularly in writing *Faculty* • Perception that exams are overly easy, students do not deserve grades – look good on paper but only theoretical knowledge – need updated evaluation mechanisms • Repetition in coursework & syllabi – need standardization • Faculty at times go off syllabus – good for providing examples practical experience but at times neglect syllabus	*Teaching Capacity* • Heavy dependence on contract faculty leading to inconsistency in quality of instruction, irregular class hours, irregular semester calendars, cancellation of classes, rushed syllabi, areas of syllabi skipped, etcetera • Need for more permanent faculty • Need for more MSc & PhD holders across HICAST • Bachelors holders teaching other Bachelors holders – lack mastery of subject matter • High faculty turnover • Students go to community farms to take samples, but do not report back to the farmers – results in frustration & distrust – no requirement for students to return results to community • Linkage between HICAST & community for teaching purposes is weak: Lack of understanding/communication between producers & students; distrust of students because of the importance of animals to the household (fear of students making mistakes), poor practical skills of students	

HICAST Livestock Systems Capacities Rapid Gap Analysis Table Cont.

	Human Capacity Needs	Organizational Capacity Needs
Outreach	***Training/Research Needs – HICAST & Communities*** • Collaboration with farmers for research that directly connects to community • Biosecurity including WASH relationship to livestock sector • Community development skills: working with communities, communication skills, gender dynamics, & relationship of ASF to human nutrition • Business skills • Communities need practical basic trainings: husbandry, nutrition, management, etc. • Value addition such as dairy processing	• Community would like more direct collaboration/contact with HICAST • Need for a comprehensive plan/strategy for community outreach: Example: stakeholder meetings, producer feedback, on-farm research, identification of farmer needs, explanation of programs

Country-wide Livestock Issues
• Infertility • Genetic pool • Fodder from locally available resources • Seasonality – irrigation/fodder challenges • Expired/poor vaccinations, medicines – Drug Administration human focused, no MOLD representative in DA • Import issues – high costs, poor quality • Cultural/religious/political barriers in culling cattle • New government – positive, but potential changes to ministries • Some policies lacking: insurance, compensation, animal welfare, breeding • Lack of support programs from government for livestock sector – subsidies or seed grants

Columns: HUMAN | ORGANIZATION | INFRASTRUCTURE & ENVIRONMENT

Rows: RESEARCH | TEACHING | OUTREACH

RESEARCH

Research Focus
Connection to community needs/resource availability
Connection to human nutrition/ASF
Modernize

Little organizational focus on research – primarily a teaching institution

Need incentives to conduct research

No mechanism for evaluation between promotion periods – some faculty "coast"

Perception of low transparency in decisions

Political influences that affect morale

Lab facilities and materials

Lab Skills
What to purchase
How to use
Why & when
Interpreting results
Lab management

Research Skills
Research Design
Methods
Data Analysis
Statistics/Modeling
Thesis process

Practical Skills
Field-Skills
Lab Skills
Community Skills
Grant Writing
Communication
Computer skills

Transparent process for selection to participate in training opportunities

Manpower
3-5 years, retiring faculty = skills gap
Lack of MSc & PhD holders
High turnover

Lack of incentive systems for performance

Lack of accountability: Rules & Procedures Job Role/Duties

No involvement or mechanisms for junior faculty and staff to participate in decision-making & feedback

Cultural norms of hierarchy/age for opportunity and advancement

Job insecurity, lack of respect and appreciation, fear of retribution

Library resources including

Field sites and research farms

Study space and classrooms

Salary and Benefits

TEACHING

Neglect of syllabus
Lack of subject knowledge

High dependence on contract faculty

Irregular semester and course calendars

Pedagogy
Teaching practice
Participatory
Evaluation methods
Consistency

Paper grades should be equal to actual knowledge and skills

Lack of evaluation system for instructors – course feedback

Students go to field but do not return results to community

Weak linkages to community, lack of understanding, communication

Curriculum reform process takes too long

OUTREACH

Community Training
Basic skills: Fodder, husbandry, management, nutrition, value addition

Community Development
Communication
Business skills
Marketing
Gender dynamics
Livestock + WASH
Livestock + ASF
Nutrition

Need for comprehensive outreach strategy: training, collaboration, and relationships

Legend

- Training Gap
- Relationships Gap
- Norms/Culture
- Process Gap
- Resource Gap
- → Relationship & Direction
- ← Key Backwards Relationship
- ⋯ Government Process

Appendix D: Gap Analysis Workshop Agenda

FEED THE FUTURE INNOVATION LAB FOR LIVESTOCK SYSTEMS

Human and Institutional Capacity Development Partner Assessment – Phase 2

HICAST, Kathmandu – Friday, December 22nd

The objectives of this workshop are:

1. Share and discuss the results of a rapid analysis of needs related to livestock research and education capacities including human, organizational, and enabling environment constraints.
2. Discuss opportunities & constraints to collaboration on capacity development between HICAST and LSIL.
3. Prioritize capacity development areas of intervention.
4. Develop a tentative focus and plan of action for collaboration on capacity development between HICAST and LSIL.
5. Identify key personnel for communication, planning, and decision-making for collaboration on capacity development.

Time	Activity
9:45-10:00	Registration
10:00-10:20	Welcome and introductions
10:20-10:50	Presentation of LSIL Rapid Analysis of capacity development needs at HICAST
10:50-11:10	HICAST presentation on internal needs assessment
11:10-11:30	Questions and discussion on LSIL and HICAST assessments
11:30-12:00	Discussion of opportunities and constraints to collaboration
12:00-1:00	Lunch
1:00-2:00	Prioritization of capacity development interventions in working groups
2:00-2:40	Development of plan of action and identification of key personnel
2:40-3:00	Final discussion and comments

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Appendix E: Full Gap Analysis and Priority Setting Workshop Results

Prioritization of Capacity Development Gaps

Administration

Gaps	Related Gaps	Strengths	Challenges
1. Resources	R1. External funding R2. Full-time faculty R3. Collaboration with international institutions	S1. Physical facilities S2. Professional adjunct faculties S3. Private organizations	C1. Lack of government and public support C2. Retaining talented junior faculties
2. Trainings	R1. Coordination with nearby agencies R2. Linkages with stakeholders is poor	S1. Facilities and administration available S2. Strong professional expert pool	C1. Traditional attitude of government and international donors (USAID/UN/PAO) in who is invited to and supported for training
3. Relationships	R1. Government and donor agencies traditional attitude (re: funding only public institutions) R2. Collaboration with foreign universities	S1. MOU with government agencies and private partnerships S2. Adjunct professors research farm from government/private agencies	C1. Lack of government policy in PPP implementation – linkages with public university but not with HICAST
4. Research & Extension	R1. Lack of resources including in education system R2. Poor infrastructure R3. Reliance on adjunct professors	S1. Collaboration with private farms, own research and trial farms, veterinary lab/clinic, other labs	C1. Full time faculty C2. Lack of research culture in TRE

Senior Faculty (including adjunct)

Gaps	Related Gaps	Strengths	Challenges
1. Inadequate clinical practices	R1. Farm facilities limited R2. Inadequate lab facilities R3. Incentives lacking	S1. Enrollment/students S2. New veterinary teaching hospital S3. Faculty	C1. Inadequate equipment C2. Teaching location and lack of transportation to practical facilities
2. Inadequacy in faculties	R1. Few junior faculty R2. Irregularity of part time faculty R3. Retention of regular faculty	S1. Faculty S2. Experience of part time faculty S3. Relationship with stakeholders	C1. Incentive package for faculties C2. Retention problem C3. Further academic studies
3. Quality of education	R1. Ineffective teaching and learning processes R2. Weak linkages with research and extension R3. Lack of opportunity for updating knowledge	S1. Faculty well qualified and committed S2. Lab and teaching building S3. Good coordination linkage	C1. Ineffective M&E systems for faculty and students C2. Access to updated knowledge C3. Access to enabling facilities for faculty
4. Poor research capacity	R1. Poor research facility R2. Inadequate resources R3. Poor research needs identification R4. Inadequacy of facilities for research	S1. Existence of research and training directorate S2. Mandatory thesis for graduates and undergraduates S3. Post graduate degree	C1. Inadequate research environment C2. Weak research strategies

Junior Faculty

Gaps	Related Gaps	Strengths	Challenges
1. Job stability and job security	R1. Promotions or grading R2. Reward R3. Interest	S1. Self satisfaction S2. Quality increments S3. Commitment	C1. Lack of vision (and articulation/ communication of existing vision) C2. Implementation problems C3. Favoritism
2. Capacity building	R1. Training R2. Research and extension R3. Further study support	S1. Skill, knowledge and strength development S2. Increase in competitiveness S3. Update knowledge	C1. Lack of coordination C2. Lack of funding
3. Facilities	R1. Upgrading salaries R2. Incentives R3. Lab facilities	S1. Increase in motivation and performance S2. Sustainability S3. Involvement in research activities	C1. Intention towards improvement of junior faculties C2. Lack of resources
4. Roles and responsibilities	R1. Decision-making processes R2. M&E R3. Implementation	S1. Improvements in performance S2. Sort out lacking	C1. Lack of bottom to top approach C2. Lack of performance according to job status

Students

Gaps	Related Gaps	Strengths	Challenges
1. Infrastructure	R1. Instruction rooms R2. Laboratory R3. Training hall R4. Research farms/fields	S1. Own land/process of building S2. Basic lab equipment S3. Transportation facility	C1. Location/site in capital
2. Policies and mechanisms	R1. Academic calendar R2. Evaluation methods R3. Administration/ execution of policies	S1. Complete syllabus (compared to other university) S2. Internal assessment and evaluation S3. Enough human resources	C1. Coordination and management C2. No separate agricultural department in Purbanchal University system
3. Trainings	R1. Irrelevant training R2. Too theoretical	S1. Skilled manpower S2. Positive attitude S3. Participatory nature	C1. Schedule C2. Practical/exposure C3. Collaboration/MOU

Collapsed Grid

After each group presented their prioritized gaps, those that were similar were combined and those that were related to infrastructure or materials were removed, as they are out of the scope of the Livestock Systems Innovation Laboratory project. At that point, the participants took part in a participatory voting process to prioritize the top issues. The top four areas of prioritization are in bold, below.

Gaps	Related Gaps	Strengths	Challenges
1. **Job stability and job security**	**R1. Promotions or grading** **R2. Reward** **R3. Interest** **R4. Decision-making processes** **R5. M&E** **R6. Implementation** **R7. Irrelevant training** **R8. Too theoretical** **R9. Coordination with nearby agencies** **R10. Linkages with stakeholders is poor**	**S1. Self-satisfaction** **S2. Quality increments** **S3. Commitment** **S4. Improvements in performance** **S5. Sort out lacking** **S6. Skilled manpower** **S7. Positive attitude** **S8. Participatory nature** **S9. Facilities and administration available** **S10. Strong professional expert pool**	**C1. Lack of vision (and articulation/ communication of existing vision)** **C2. Implementation problems** **C3. Favoritism** **C4. Lack of bottom to top approach** **C5. Lack of performance according to job status** **C6. Schedule** **C7. Practical/exposure** **C8. Collaboration/MOU** **C9. Traditional attitude of government and international donors (USAID/UN/PAO) in who is invited to and supported for training**
2. **Policies and mechanisms**	**R1. Academic calendar** **R2. Evaluation methods** ~~**R1.**~~ **Administration/ execution of policies**	**S1. Complete syllabus (compared to other university)** **S2. Internal assessment and evaluation** **S1. Enough human resources**	**C1. Coordination and management** ~~**C1.**~~ **No separate agricultural department in Purbanchal University system**
3. **Inadequate clinical practices**	~~**R2. Farm facilities limited**~~ ~~**R3. Inadequate lab facilities**~~ ~~**R4. Incentives lacking**~~	**S2. Enrollment/students** **S3. New veterinary teaching hospital** **S4. Faculty**	~~**C2. Inadequate equipment**~~ ~~**C3. Teaching location and lack of transportation to practical facilities**~~
4. **Quality of education**	**R1. Ineffective teaching and learning processes** **R2. Weak linkages with research and extension** **R1. Lack of opportunity for updating knowledge**	**S1. Faculty well qualified and committed** **S2. Lab and teaching building** **S1. Good coordination linkage**	**C1. Ineffective M&E systems for faculty and students** **C2. Access to updated knowledge** **C3.** ~~**Access to enabling facilities for faculty**~~
5. Poor research capacity	~~R1. Poor research facility~~ ~~R2. Inadequate resources~~ R3. Poor research needs identification ~~R4. Inadequacy of facilities for research~~	S1. Existence of research and training directorate S2. Mandatory thesis for graduates and undergraduates S3. Post graduate degree	C1. Inadequate research environment C2. Weak research strategies
6. Capacity building (training)	R1. Training R2. Research and extension R3. Further study support	S1. Skill, knowledge and strength development S2. Increase in competitiveness S3. Update knowledge	C1. Lack of coordination ~~C2. Lack of funding~~

Gaps	Related Gaps	Strengths	Challenges
7. Relationships	R1. Government and donor agencies traditional attitude (re: funding only public institutions) R2. Collaboration with foreign universities	S1. MOU with government agencies and private partnerships S2. Adjunct professors research farm from government/private agencies	C1. Lack of government policy in PPP implementation – linkages with public university but not with HICAST
8. Research & Extension	R1. Lack of resources including in education system ~~R2. Poor infrastructure~~ R3. Reliance on adjunct professors	S1. Collaboration with private farms, own research and trial farms, veterinary lab/clinic, other labs	~~C1. Full-time faculty~~ C2. Lack of research culture in TRE
9. ~~Facilities~~	~~R1. Upgrading salaries~~ ~~R2. Incentives~~ ~~R4. Lab facilities~~	~~S1. Increase in motivation and performance~~ ~~S2. Sustainability~~ ~~S2. Involvement in research activities~~	~~C1. Intention towards improvement of junior faculties~~ ~~C3. Lack of resources~~
10. ~~Infrastructure~~	~~R1. Instruction rooms~~ ~~R2. Laboratory~~ ~~R3. Training hall~~ ~~R3. Research farms/fields~~	~~S1. Own land/process of building~~ ~~S2. Basic lab equipment~~ ~~S3. Transportation facility~~	~~C2. Location/site in capital~~
11. ~~Resources~~	~~R1. External funding~~ ~~R2. Full-time faculty~~ ~~R4. Collaboration with international institutions~~	~~S1. Physical facilities~~ ~~S2. Professional adjunct faculties~~ ~~S3. Private organizations~~	~~C1. Lack of government and public support~~ ~~C3. Retaining talented junior faculties~~
12. ~~Inadequacy in faculties~~	~~R2. Few junior faculty~~ ~~R3. Irregularity of part time faculty~~ ~~R4. Retention of regular faculty~~	~~S2. Faculty~~ ~~S3. Experience of part-time faculty~~ ~~S4. Relationship with stakeholders~~	~~C1. Incentive package for faculties~~ ~~C2. Retention problem~~ ~~C3. Further academic studies~~

Suggested of Plans of Action

Suggested area of Intervention	Administration & Senior Faculty	Senior Faculty including Adjunct	Junior Faculty	Students
Job Stability and Security	• Grant writing and on competitiveness for job by research • Training and consultancy to pay salary for permanent faculty • Higher education opportunities	• Establish performance evaluation system based on results (HICAST Management) • Establish reward and punishment including giving feedback (HICAST Management) • Base promotion on performance (HICAST Management) • Review administration and finance act regularly, ensuring job security of faculties and support staff (HICAST Management)	• Job permanent within a year of enrollment • Grading of faculty should be as per government rule • Promotion based on stability and performance • Bottom to top approach	• Professional career development • Motivation and evaluation • Promotion • Rewards and incentives • Contracts

Policies and Mechanisms	• Learn from American universities
	• Support from USAID
	• Visiting faculty and academic management consultant from USAID/UF
	• Focal persons at HICAST:
	    o Bidur, director
	    o Parsha Thapa, junior faculty
			• Designation, role, and responsibilities should be clear
			• Advocacy for implementation of academic calendar
			• Linkage between university and HICAST shold be enhanced
			• Further study for faculty enhancement should be implemented
			• Faculty exchange program with international institution should be upgraded
				• Communication
				• Coordination
				• Chain of command
				• Evaluation
				• Administration
				• Execution

Inadequate Clinical Practices	• Research based final semester education • Establishment of decent lab and community outreach for learning • Research stations with PPP mode	• Establish MOU with NARC/DLS and other related institutions for clinical practice (HICAST Management) • Provide logistics (transportation, etc) for students (HICAST Management) • Research and capacity building for faculty and resource persons (HICD-Team/HICAST) • Skill development for running laboratory (HICD-Team/HICAST)	• Diagnostic and surgical training • Plant clinic should be established • Nucleus farm should be developed • Department-wise lab adequate for clinical processes	• Diagnostic training and facilities • Exposure • Nucleus farm • Fully equipped • Veterinary hospital • Skilled veterinarian
Quality of Education	• Case-based education and curriculum development • Knowledge transfer and experience share from UF • Enhance Purbanchal University for curriculum development and innovative exam and evaluation	• Capacity building for effective teaching and learning process (pedagogy) to faculties (HICD-Team/HICAST) • Capacity building in making effective session plans (HICD-Team/HICAST) • Establish MOU with NARC/DLS and other stakeholders for undertaking research (HICAST Management) • Strengthen e-library facilities (HICD-Team/HICAST) • Access to latest updated national and international scientific journals (HICD-Team/HICAST) • Faculty exchange (HICD-Team/HICAST)	• Syllabus should be updated • Department-wise training should be encouraged • Exposure of guest lecture for students	• No political interference • Skilled, qualified and experienced teachers • Syllabus should be covered • Adequate infrastructure (lab, library, field, transportation)

Appendix F: Workshop Photos

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