



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Feed the Future Innovation Lab for Livestock Systems

Human and Institutional Capacity Development Gap Analysis in Ethiopia: Summary Report and Recommendations

Report Prepared by
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Abbreviations

AET	Agricultural Education and Training
AOI	Area of Inquiry
ASF	Animal Source Food
CCT	Cross-cutting Theme
CDAIS	Capacity Development for Agricultural Innovation Systems
FAO	Food and Agricultural Organization of the United Nations
HCD	Human Capacity Development
HICD	Human and Institutional Capacity Development
ICD	Institutional Capacity Development
IFAS	Institute of Food and Agricultural Sciences
ILRI	International Livestock Research Institute
INGO	International Non-Governmental Organization
NGO	Non-Governmental Organization
OCD	Organizational Capacity Development
TAP	Tropical Agriculture Platform
UF	University of Florida
USAID	United States Agency for International Development

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Introduction

The U.S. Agency for International Development (USAID) awarded funds to the University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) 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) partners with UF/IFAS in implementing the Livestock Systems Innovation Lab.

Given their research and teaching capacities, Haramaya University, Gondar University, and Hawassa University, hereafter referred to as “Haramaya,” “Gondar,” and “Hawassa” respectively, are strategic institutions for many of the Livestock Systems Innovation Lab’s projects in Ethiopia. This report is the result of a rapid gap analysis of the human and institutional capacity development (HICD) strengths and weaknesses of these three universities as providers of research, education, and workforce development in livestock systems. The rapid analysis included in-depth interviews and focus groups with stakeholders internal to and external to the three universities. Interview and focus group questions investigated the strengths and weaknesses of the university 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 to effective research and teaching within the organization and environment.

This report provides an overview of the Livestock Systems Innovation Lab capacity development approach, the results of the rapid gap analysis, and recommendations for next steps in the development of a work plan involving Haramaya, Gondar, and Hawassa Universities and the Livestock Systems Innovation Lab. This report, and resulting feedback from the universities, the Livestock Systems Innovation Lab, and USAID/Ethiopia, will be the basis of future activities.

Capacity Development Approach

The USAID framework for HICD, as well as other frameworks 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 (Jones, Rojas, and Gill, 2015). 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 (USAID, 2010).

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 (FAO, 2016).

The individual (human) level: the knowledge, experiences, and skills that enable an individual 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 and agency of the individual (FAO, 2016; UNDP, 2009).

The organizational level: the internal structure, policies, and procedures that determine an organization’s effectiveness. (FAO, 2016; UNDP, 2009) This includes support systems (fiscal, human resource, technical), incentive systems, as well as organizational goals and plans that influence an individual’s ability to perform (FAO, 2016; USAID, 2012).

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 (FAO, 2016; UNDP, 2009). The enabling environment involves how human capacity functions within the organization and the environmental system that surrounds it (FAO, 2016; USAID, 2012). These connections extend to external institutions such as government, civil society, the private sector, and the larger cultural system (FAO, 2016; USAID, 2012).

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 (FAO, 2016; UNDP, 2009).

The Livestock Systems Innovation Lab’s HICD plan is built on the 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 HICD Theory of Change and the interactions between human capacity, institutional capacity, and the enabling environment.

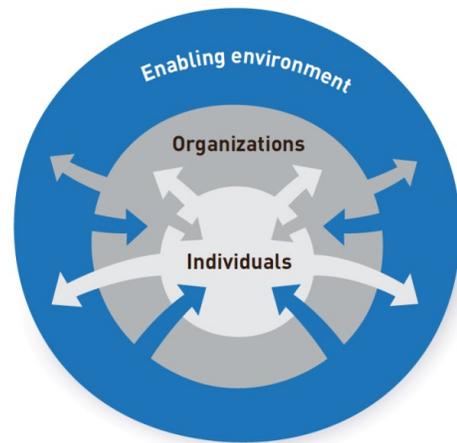


Figure 1: Three levels of capacity development (USAID, 2012)

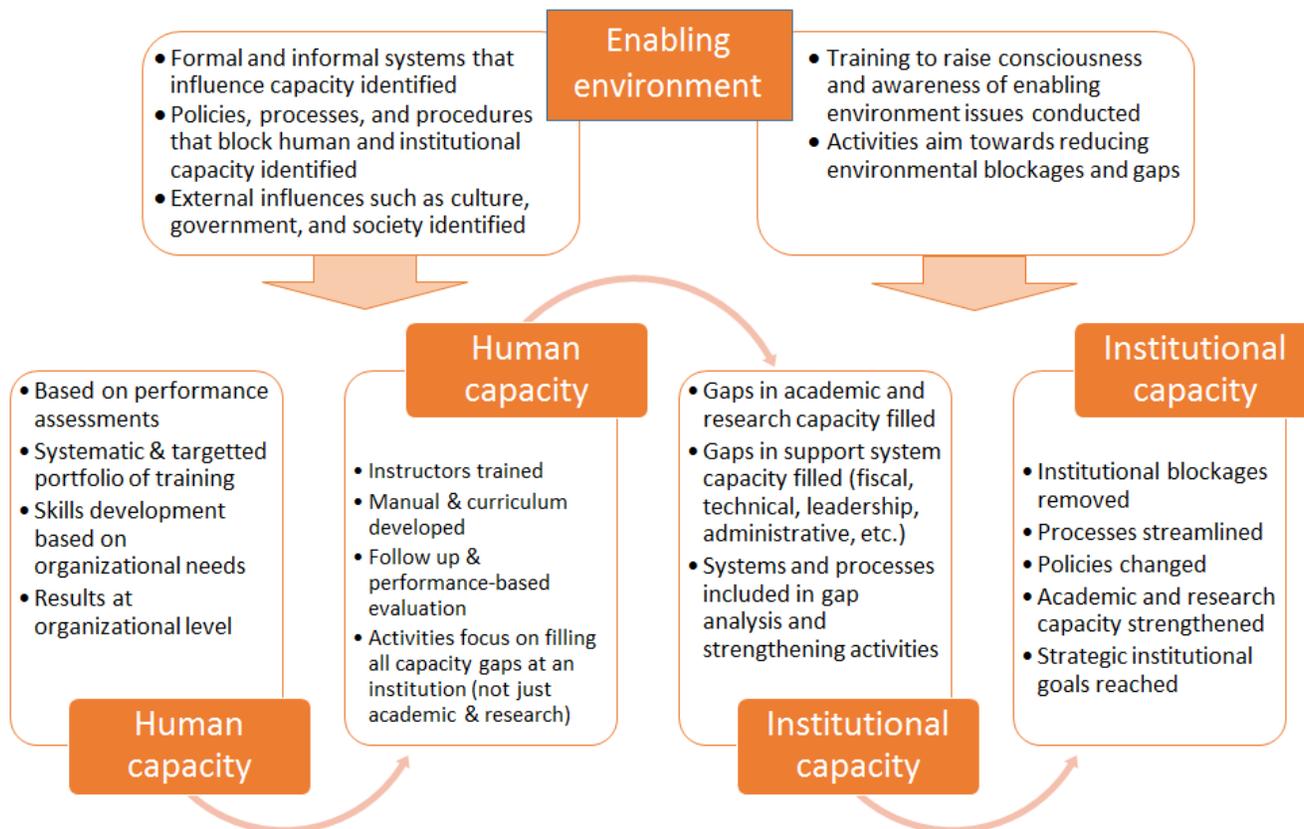


Figure 2: Conceptual Model of the Theory of Change for HICD in the Livestock Systems Innovation Lab

After a close examination of 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 based on the rationale that:

- 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:

1. Identifying and filling the human and organizational capacity related gaps in target Livestock Systems Innovation Lab partner institutions that align with the Areas of Inquiry (AOIs) and cross-cutting themes (CCTs).
2. Attuning to institutional arrangements and the enabling environment in which the Lab's 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 our partner institutions and their stakeholders to ensure that they are an integral part of the HICD planning process and activities.

In Ethiopia, our HICD efforts will focus on Haramaya, Gondar, and Hawassa Universities as primary Livestock Systems Innovation Lab partners. The national research centers are considered strategic partners and will be considered for HICD efforts when their needs align with the activities targeted to the three universities.

Data Collection and Analysis

Data collection took place over two time periods. In October 2017, the HICD team conducted an initial set of meetings in Addis Ababa with key stakeholders including the Ethiopia Institute of Agricultural Research, the Ministry of Education, Director General of the Office of Higher Education, Research and Academic Affairs, the Minister of Livestock and Fisheries, and the Deputy Director General of the Education Strategy Center. Site visits were also made to ILRI, Addis Ababa University, and Hawassa University.

In May 2018, the HICD team returned to Ethiopia and used the previous results as the basis for a full gap analysis on site at each University location. Data collection included in-depth interviews and focus groups internal and external to the universities. The results of the analysis and the subsequent suggestions from Haramaya, Gondar, and Hawassa Universities are discussed below.

Rapid Gap Analysis Results

Institutional Strengths

While the focus of this report is on the capacity development gaps at Haramaya, Gondar, and Hawassa Universities, it is important to state that the interview and focus group participants had many positive comments about the organizations and the manpower that they produce through the various degree programs offered:

Haramaya University

- The university has a positive relationship with the community, particularly near the university. The university established a research agenda based on the needs of stakeholders including local communities. MSc and PhD students conduct research based on community needs. The university has ten sub-stations that work with communities and farmers around the country.
- The national research institutes consider Haramaya to be a research partner. Haramaya manages many of the research institutes' projects.
- Haramaya University is a "parent" institution that has incubated and assisted several other institutions in becoming fully recognized universities, particularly agriculturally focused universities. Half of the university

presidents nationwide were educated at Haramaya. Haramaya often provides manpower, materials, animals, and other support to fledgling universities.

- Haramaya University is considered a “center of excellence” where faculty from other universities as well as the research institutes go to continue their education. The university also has an “African Center for Excellence” in partnership with the World Bank. This partnership focuses on agriculture and biodiversity and, in addition to Ethiopian students, supports 30 PhD students from ten other African countries.

Gondar University

- Gondar University is one of six original first-generation, public veterinary schools in Ethiopia. The veterinary clinic has recently been upgraded to a hospital that provides services to the community and consultations to producers. The hospital also provides training to community animal health workers and extensionists. It should be noted that a new hospital is under construction with a planned completion date of June 2019.
- Gondar University has a positive working relationship with other Universities and with the Ministries. They also have partnerships with international institutions such as Ohio State University, which is working with the University to implement curriculum reforms.
- Students at Gondar University are complimentary of the quality of education, particularly in the veterinary program. The students feel that they are competitive when they leave the institution and get a solid grounding in their field, despite the challenges posed by a lack of laboratory materials and access. Students also report that in their opinion, the curriculum is more advanced than at other institutions, and when possible, the University provides additional opportunities and programs that focus on practical skills training. For example, the veterinary medicine students participate in 2-week intensive trainings in regional laboratories at the end of their second year.

Hawassa University

- Students at Hawassa University feel as though their faculty have better qualifications and training than the faculty at other Universities. They feel that the faculty have a strong record of publication and have high standards for research. As a first generation university, the length and depth of research experience buffers the lack of infrastructure (e.g., working farms and labs) in terms of the desirability of the university as a place of study.

Challenges Across Institutions

Human

Laboratory Skills

Issues with laboratories were the most reported concern of faculty and students alike at all three Universities.

Laboratory technicians lack basic equipment maintenance skills including how to regularly maintain, calibrate, and repair the various kinds of lab equipment. Technicians do not know how to properly use equipment, which tests to run and why, and how to interpret test results. Reportedly, there is no standardized laboratory technician training in Ethiopia. The training varies widely including through vocational training centers and some universities. Most laboratory technicians are diploma holders. In addition to these challenges, laboratory staff rarely have an opportunity to update their existing knowledge. When opportunities for training occur, it is usually senior-most faculty who are given the chance to participate.

The labs are primarily used for demonstration purposes. Students, especially undergraduates, rarely get to use the equipment in most of the laboratories and the willingness of laboratory technicians to assist graduate students or to

give them access to the laboratories varies, but is generally low. Graduate students who must conduct research struggle to find working laboratory equipment.

There is little capacity in the veterinary labs in terms of diagnostics, particularly for zoonotic diseases. The majority of the laboratories focus on fecal diagnostics. This is also a challenge at the district and regional laboratories. Similar to the issues that graduate students face, researchers also lack in diagnostic kits, consumables, and equipment. There is also a lack of expertise in diagnostic imaging and various medical specializations.

Technical and Practical Skills Gaps

Some key technical skill gaps are creating bottlenecks and blockages for the development of faculty and students. Laboratory skills are discussed above, but it is important to note that issues with laboratory skills, consumables, laboratory access, and infrastructure are directly related to some of the other key gap areas. In most cases, the district and regional laboratories depend on the ability to conduct fecal tests to determine how to handle issues such as animal health. As one participant stated, “There are no confirmatory diagnoses, only symptomatic.” The lack of knowledge on which laboratory tests to run, how to read the output, and the availability of the equipment to run the needed tests may tie, for example, to the level of statistics needed to interpret test results and create statistical models.

The statistical software packages being used at the universities include SPSS, SAS, and STATA, but the level of proficiency widely varies as does the version of the respective software package. Very few faculty use R and there is some resistance to moving to R due to the perceived complexity of the software. The faculty and students desire to conduct advanced research including at the molecular level but have limited statistical skills. In addition, the teaching of statistics is theoretical rather than practical with students receiving very limited opportunities to use statistical software. Both faculty and students perceive this as a key constraint to the capacity of the universities to conduct research. The faculty also point out that it is a significant challenge to reach the level of mastery required for high level statistics. Short-term training is helpful but insufficient to meet the need for building long-lasting capacity in this area. They articulate a need to have faculty who specialize in statistics and/or a center for statistics at the university where faculty and students can get assistance from point-persons who have the necessary expertise.

Writing is another key blockage, inclusive of grant and scholarly writing. Students are expected to write scientific papers but perceive that they lack sufficient training. Faculty want to compete internationally for grant money but lack the knowledge of how to both access these funds and write to the donors’ expectations.

The most commonly identified issue across the Universities is the lack of opportunities to gain practical skills. This is due to schedule constraints, the high teaching load of faculty, a lack of necessary, working equipment and infrastructure, and a lack of the capacity of faculty and technicians to train students. The exam required for students to graduate is a national exam that is highly theoretical. While many students pass these exams, stakeholders external to the Universities report that at the field level the students who are graduating are unprepared for practical work. In addition, there is under-resourcing at the field regional and district level laboratories and students who are hired in these positions both lack perceived necessary skills coming out of their degree programs and seem unable to learn on the job, according to interviewees.

The students and faculty identified the following technical and practical skills gap areas:

- Data analysis including biostatistics, R statistical software including sequencing and modeling
- Grant writing at a higher level to become competitive for international and collaborative grants
- Writing for scholarly journals

- Leadership skills, dynamic thinking, and creative thinking
- Food processing*
- Microbiology*
- Molecular genetics*
- Biotechnology*
- Virology*
- Immunology*
- General software training (for students)
- Communication and community outreach

*Topics marked with an asterisk primarily involve laboratory skills training for which there are few, if any, functioning equipment or laboratories. Additionally, technical topics as well as practical skills training would benefit from working internet connectivity for purposes of accessing course materials, practicing methods, accessing case studies and videos and other materials to enrich content. Unfortunately, few campuses have good connectivity.

Teaching Capacity

The perception of teaching capacity at the Universities vary. While we were told that a higher diploma program is offered to faculty to be certified in pedagogy, none of the interviewees were aware of the program. Many faculty and students state that the theoretical training at the institutions is of high quality. However, PhD and MSc students who teach courses are not well prepared to teach and are not well mentored in teaching by faculty. Student teachers feel unprepared to teach and MSc students in particular, must teach themselves the course material before teaching it to their students. Student teachers state that they need mentoring in teaching practices and previous teachers should be willing to share course materials. Additionally, there is no systemic support for student teachers in terms of sharing experiences, materials, or techniques. Both students and faculty state that university resources primarily go to research activities over teaching activities.

The practical side of teaching, i.e., laboratory work, is reportedly poor due to the lack of laboratory equipment and laboratory teaching skills, teaching farms that are not well resourced, a lack of updated technologies, and lack of incentives. The supply of laboratory chemicals is almost always in short supply, in many cases the equipment is not functional, even for demonstration purposes. In subjects such as biostatistics and molecular biology, there is a general knowledge gap that forces instructors to teach theoretically rather than practically.

Faculty and students suggest training activities including:

- Curriculum development
- Teaching practice – particularly for practical learning
- Updated technology skills
- Linking outputs to community needs

Mentoring/Advising

Students overall report positive relationships with their mentors and advisors. However, there is a lack of supervisory faculty, particularly at the PhD level, with mentors having to be responsible for many students in addition to their teaching and research duties. Because of this, mentors are not able to spend adequate time with students. Students report that it takes faculty 3-4 months to provide feedback on student work. Many students report very little guidance during the thesis process, which creates significant issues when the student faces their thesis defense. In addition, it

can be challenging for students to find a skilled advisor in the area that they are trying to study. Due to a lack of manpower and expertise, students are unable to advance their research into new areas. For example, many faculty do not have expertise in biostatistics, laboratory work, and updated research methods. As such, students often replicate work that has already been conducted using “classical dogma.” Students frequently report that they look at thesis work conducted at other universities and then replicate that research as their own thesis.

Organizational

Laboratory Management

In addition to laboratory skills, management of laboratories is a significant issue. Laboratory managers and technicians lack the skills to maintain and fix equipment. There are often poor laboratory practices that result in equipment wearing out or malfunctioning. Laboratory staff are in dire need of training on how to run, maintain, and repair laboratory equipment as well as the general administrative duties associated with managing a lab. Coupled with this is an issue of high turnover of laboratory staff as many lab technicians wish to shift to a lecturer position or another higher paying position within or even outside the university.

It is also important to note that funding for repairing, maintaining, and purchasing equipment is a challenge for the institutions. This is an issue that requires further exploration to determine where blockages occur from funding issues versus from the Ministry of Finance procurement process.

Qualifications of Staff

In 2017, 11 new universities were opened for a total of 44 universities. Some 30% of academic staff only have BSc degrees. The goal of the Ethiopian government is that within the next 3-4 years all university faculty involved in teaching must hold an MSc or PhD degree. It is not likely this will be achieved with the rate of new universities being opened and the continued shortage of advanced degrees. Seven hundred postgraduates were sent to India for training in 2018. U.S. and European postgraduate degrees are considered too expensive for the government to fund.

None of the Universities are close to achieving the higher degree level goal for their academic staff. For example, Haramaya University is currently at 25% of faculty holding an advanced degree. Some of the suggestions given to address this need included sandwich programs, long-term research partnerships, faculty exchanges, and short-term training.

“Shelf” Research

Many faculty and students at the Universities express a concern that the research system is conducting “shelf research” or “academic exercises” meaning that the research is repetitive and not innovative. They stress that while there is a national research plan, there is insufficient research money to reach the goals of the plan, the livestock component is limited in scope, and the result is a repetition of the same “old” ways of conducting research. The national research plan is particularly narrowly focused on dairy science, meat science, and animal health. The participants at one institution give the example that the national Livestock Master Plan (LMP) focuses on doubling poultry production but in their opinion does not have a well-integrated strategy for how to increase feed production to meet the needs of the poultry industry.

Much of the research conducted is not accessible or relevant to stakeholders, particularly at the community level. While the Minister of Livestock and Fisheries expressed that research and extension should work together and be integrated, that does not happen currently. Many of the participants feel as though the research should be focused on

community-level needs and organized as a community-based research system. Some of the Universities report that they have consulted with local stakeholders to develop their own research priorities. However, they also report that despite these efforts, the research being conducted does not meet the demands and needs of the local stakeholders.

Curriculum Gaps

Students report that the change from undergraduate to graduate coursework is particularly challenging. At the undergraduate level students are “spoon-fed,” provided with materials to memorize, and repeat memorized materials in tests. At the graduate level the “way of thinking and learning” changes and new graduate students feel unprepared for the change. Students also feel as though their coursework is lacking a perspective on innovations, the social component of animal and veterinary sciences, and sufficient practicals. Graduate students would like to see courses or coursework integration on:

- Scientific writing
- Publishing in peer-reviewed journals
- New ways of thinking about research

Thesis Support

An issue consistently raised by students is a lack of thesis support in terms of funding, topics, mentoring and access to up-to-date research. The primary challenges are a lack of up-to-date knowledge on the part of the faculty, access to laboratory resources, and availability of funding. Students report that the faculty do not have the knowledge to assist students in researching new ideas. This is including knowledge of newer research methods, statistics, and subject matter expertise. The lack of laboratory equipment and consumables, reagents, and kits also prevents students from conducting advanced lab research. Those who do must send their samples to countries outside of Ethiopia, typically in Europe or the United States, and must wait months for their results. Additionally, all students receive a fixed amount of funds to conduct research but accessing these funds is time consuming and challenging. For many students, the effort to access these funds is not worth the amount of funding they receive. These issues result in students, particularly at the MSc level, conducting research that has already been done. In many cases this means taking the thesis topic from a thesis at another university and replicating the study. Many students also conduct social science survey work because they do not have access to laboratories or funds to conduct other kinds of studies. Those students who push through these issues and attempt innovative research face high criticism by faculty. This is typically allegedly because the faculty are not able to provide adequate guidance to students who are attempting to conduct innovative research, which results in errors in study design, tests, and interpretation of results, due to a lack of guidance.

Institutional Relationships

Overall, it is perceived that there are very weak relationships between the University and non-University institutions. This is particularly relevant in terms of research and extension linkages. This is less true of Veterinary Medicine and the district veterinary officers. Reportedly, there have been high-level discussions about the lack of collaboration. In order to achieve more collaboration, there needs to be an organizing or umbrella body that can bring the various stakeholder groups together. There is supposedly a national level plan to do so but it has not yet been released.

Enabling Environment

Laboratory Infrastructure

As discussed above, laboratory infrastructure is lacking, including equipment and consumables. Currently, the Ministry of Finance oversees the purchasing of laboratory equipment and consumables. The Ministry aggregates all of the equipment orders nationally and waits for a sizeable order to purchase from outside of Ethiopia. This results in researchers waiting up to two years to receive their equipment and supplies, causing significant delays in research projects. Many times, consumables arrive at the laboratory already expired. These issues hurt the university's ability to conduct quality research and causes significant issues with international funders and partners due to delays in the ability of researchers to meet deadlines. In many instances this also results in graduate students finishing their programs late, which has financial consequences for them.

In some labs, equipment is available but in a poor state or there is a lack of knowledge on how to use the equipment. The exact equipment needed at each University varies. However, the following list of needs is consistent across the institutions:

- Microbiology
- Genetics and breeding. Microgenetics samples are being sent to Denmark for analysis.
- Dairy technology. There is equipment to conduct gross nutrition tests, but beyond gross nutrition the lab is lacking in key pieces of equipment.
- High tech equipment such as for genomic sequencing
- Mycology
- Animal nutrition. Labs have equipment but need updated training for lab techs in order to utilize the existing equipment.

Veterinary students must go to other universities for practical lessons. Haramaya University also lacks generators to back up the laboratory buildings and there are issues with power outages that disrupt and delay tests.

Technological Infrastructure

In addition to issues with laboratory infrastructure, students from all three Universities point out a lack of technological services such as access to high quality journal articles and analytical software. They also report that the internet is intermittent and library computers have no connection to the internet. Haramaya has, however, recently made internet available across the campus.

Gender Constraints

The main challenge female students face is their normative responsibility to take care of children and maintain the household. These students have arranged their time in a way to allow for them to participate in classes. However, other opportunities to engage with faculty occur outside of scheduled class time and female students are often unable to participate. This leads to female students feeling less connected with faculty, which they see as preventing them from having access to the same opportunities, such as to collaborate with faculty, engage in discussions, and receive mentoring attention.

Female faculty and graduate students who teach, particularly younger women, have concerns about the challenges they face from male students who at times challenge their authority. The female students would like to see more training and opportunities for them to share their experiences, problem-solve issues that are unique to their situations, and to take training to learn self-confidence and improve speaking and presentation skills.

Challenges Unique to Institutions

Haramaya University

Turnover of Junior Faculty

Turnover of junior faculty is high at Haramaya University. PhD holders are scarce at the University and often refuse to teach undergraduate courses, which leads the younger faculty to being overloaded with courses. In universities closer to major urban areas such as Addis Ababa, faculty engage with the private sector as a source of extra income. The location of Haramaya University is fairly rural, meaning that these opportunities do not exist for the junior faculty. They also face challenges in expanding their education, as there are no multidisciplinary opportunities at Haramaya University. Junior faculty also report that they feel the quality of students has decreased and being a faculty member is not as good a career choice as it was twenty years earlier. They feel that politics and a lack of motivation are affecting satisfaction and job performance.

Communicating Successes

Haramaya University is considered a leader in agricultural research and education in Ethiopia. However, the work that they are conducting is not reaching the public. The university has an office dedicated to promoting the work of the university, but they are not communicating the successes of the university to the public. This is restricting the desire of the university to scale up relationships with international researchers in order to “get into the global level game.”

Climate-Smart Agriculture Program

Haramaya University recently began a climate-smart agriculture program in collaboration with the World Bank. This program is inclusive of the livestock sector. However, the university is not equipped with faculty knowledgeable in this area and is therefore lacking in research and teaching on climate-smart agriculture. There are also no laboratory facilities for the program and the students must look for a thesis opportunity outside of the program due to lack of faculty and facilities.

Gender Constraints

The female participants were complimentary of Haramaya University on the general treatment of female students and faculty, stating that they feel similar treatment to the male students. They also state that the senior male faculty are encouraging and supportive of female students. However, there are some gender barriers and challenges that exist for female faculty and students at the university. As of the writing of this report, only five percent of the faculty are female. Female students feel that faculty do not take gender training seriously and the level of integration of a gender lens in coursework, research, and interactions can vary widely. Some faculty integrate gender well and others do not attempt to integrate gender at all. There is a gender office at the university that conducts faculty training and is trying to prepare courses for female students, but these efforts are inconsistent.

Gondar University

Turnover of Junior Faculty

At Gondar University, junior faculty are employed as lecturers between finishing their bachelors' program and beginning their advanced degrees. This is typically a one to two year time period, after which time the junior faculty typically leave the University to begin their advanced degree or to take a position at another institution. Often these junior faculty act as laboratory technicians. Junior faculty see the position as a stepping-stone to something else. This creates some challenges in the constant turnover of faculty who are teaching basic classes. It also means that younger faculty are not able to participate in training and other professional development opportunities – in part due to their heavy teaching load.

Veterinary Hospital Equipment and Management

As discussed above, Gondar University has almost completed construction of the first large animal veterinary hospital in Ethiopia. The government has invested heavily in the physical infrastructure for the hospital building. However, as of the writing of this brief, there is insufficient funding to furnish and supply the hospital and to provide the necessary equipment to run it. The University also has concerns about how to manage the hospital, as there are no models in Ethiopia for how to run a large veterinary hospital.

Notional Involvement in Grants for Junior and Female Faculty

At Gondar University there is a requirement that junior (younger) faculty are involved on any internal grant submission. The junior faculty report, however, that this is a notional involvement. The junior faculty are included in the proposal and their signatures are garnered so that the grant can be submitted. After that point, however, they are not involved in the actual research activities.

Hawassa University

Grant Writing

Challenges to writing and winning grants are common across the Universities. The challenges faced at Hawassa are unlikely to be unique to the institution, but their articulation of the challenges was more comprehensive than the other Universities. The issue with grant writing reaches beyond the capacity to write competitive grants. The stakeholders also pointed out that to win grants it is necessary to have already established relationships with international partners in order for the grant writing team to be fast and efficient enough to respond to complex grant calls. Forming these relationships is challenging at the outset of the process. Another challenge is that due to the heavy teaching and administrative load of the faculty, they are often unable to purposively search for grants to apply for. Instead, they rely on other organizations, partners, or sources of information to bring potential grants to their attention. This results in being slow to react to grant calls as they are announced.

Finally, the institutional support for grant writing is very limited. There are no departments or personnel who are responsible for providing feedback on the grants, or assistance with the more complex aspects of grant writing such as developing budgets and budget justifications. Proposals are submitted by the faculty member to the potential donor, often without any other oversight or review in the university. While there is an Office of Research, few faculty reported using the Office when preparing proposals.

Community Outreach and Consultation

While some of the institutions have community outreach strategies or have consulted directly with communities, Hawassa University does not yet have such a process or strategy in place. The participants do report, however, that there are faculty who are conducting research with local communities, but there is no comprehensive plan or strategy across a department or across the university. Many participants feel that the lack of a strategy and the ad-hoc nature of faculty working with communities needs to be addressed in order to conduct higher quality and more relevant research.

Gender Constraints

The female participants were complimentary of Hawassa University on the general treatment of female students. However, they also point out some significant challenges. They note that while undergraduate female students have a center/place to go to for support, graduate students do not. It should be noted that the undergraduate center offers micro-financial support and guidance for rural students to navigate their new social contexts. Female graduate

students feel as though mentorship is poor. This is attributable to two primary factors. First, the faculty are overloaded and responsible for mentoring more students than they can handle. Second, female students face cultural constraints that prevent them from taking advantage of opportunities that male students can more easily take advantage of. For example, it is culturally inappropriate for female students to be alone with male faculty. Opportunities such as walking with faculty between two locations, meeting in their office, or meeting outside of regular scholarly activities is not possible for female students. As such, they feel as though they do not form the relationships with faculty that male students are able to and are subsequently overlooked for opportunities.

Recommendations from the Livestock Systems Innovation Lab HICD Team

The three Universities that were the focus of this study are geographically dispersed across Ethiopia. This will make leveraging HICD efforts a challenge. Training efforts will require decisions about a) choosing a central location and inviting participants from each University to attend, which will have cost implications in terms of per diem, travel expenses, and hotel costs; b) holding training activities at each individual University, which will make finding experts who can conduct the training a challenge due to the time demand, or; c) prioritizing one to two Universities in which we can have the most leverage. Due to the ongoing funded research activities at Haramaya University, the HICD team proposes that we focus our efforts on Gondar and Hawassa Universities in order to build capacity in the wider Ethiopian research network.

The recommendations below are the priorities that a) have been identified by the participants; b) align with Livestock Systems Innovation Lab's and USAID priorities, and c) will allow the HICD team to leverage its funds as much as possible.

Human

Short-Term Training

Technological and practical skills gaps were identified across all of the stakeholders. There are several areas in which short-term training can assist in filling the capacity gaps. Where possible, short-term training should involve a Training of Trainers component. Training should also be focused on faculty and professional researchers with graduate students as a secondary audience. This will help to build the capacity of existing and long-term faculty rather than training students who will then leave the University system. The HICD team also recommends that where possible, short-term training should include at least one follow-up training rather than a “one-and-done” training model. The following areas are suggested as priorities for training initiatives as these gap areas are consistent across Livestock Systems Innovation Lab target countries, allowing the Lab to leverage training that has been developed for one country to be adapted for others.

- Laboratory skills
- The “research package” including design, analysis, statistics and modeling, and interpretation
- Updated research methods
- Writing for publication
- Grant writing
- Teaching pedagogy and practices

In addition to these areas of focus, there are multiple technical skill areas that have been requested for training initiatives. The HICD team recommends leveraging the activities and presence of Livestock Systems Innovation Lab AOIs, CCTs, and sub-awardees for conducting such trainings. This may include trainings in:

- Food processing
- Microbiology
- Molecular genetics
- Biotechnology
- Virology
- Immunology
- Communication and community outreach
- Leadership skills, dynamic thinking, and creative thinking

Laboratory Management Training

In addition to laboratory skills training, there is a need for specialized training in how to effectively and efficiently manage a laboratory. Some of the skills that have been outlined as training needs include:

- Repair and maintenance of equipment
- Administrative activities
- Systems for monitoring equipment, reagent, and diagnostic kit needs and ordering
- Training tools such as job aids demonstrating how to run equipment
- Scheduling and time management

Organizational

Teaching and Pedagogy Training

In the past, some of the Universities have provided short-term training to faculty on teaching practices. However, the participants report that these opportunities are inconsistent. The students point out that there are some faculty who are innovative teachers who integrate active learning into their classroom. However, they feel that these teachers are not the norm and that many of the teachers are static in their teaching methods, relying on lecture and PowerPoint to convey mostly theoretical information. The lack of practical experience in the classroom as well as in the field is consistently an issue that is brought up by all levels of stakeholders. As such, there remains a need for teaching and pedagogy training. Though, the Universities have already experienced short-term training initiatives in this area, the inconsistency of such efforts and the lack of follow-up trainings render them of very little benefit. As such, the sustainability of teaching and pedagogy training should be considered prior to any initiatives. Rather than beginning short-term training initiatives, it is suggested to work with the Universities to determine why their internal pedagogy trainings are intermittent and how the Livestock Systems Innovation Lab could support a plan to develop a more consistent and reliable program for training instructors. Also, as noted above, there is supposedly a national program in place to train in pedagogy; inquiries as to whether these have made it to the three universities would be worthwhile.

Community-Based Research

The lack of alignment of research priorities with community needs is an issue that was brought up by multiple stakeholders. The research being conducted at the Universities is based on the Livestock Master Plan, which allegedly has significant gaps in terms of the national priorities and localized needs. This issue is compounded by how internal research funding is provided in Ethiopia, which focuses on the national plan. As such, despite the best efforts of some Universities to collaborate with communities, there are significant mismatches in the research being conducted and

the research that is needed. In addition, there are many reports of faculty who conduct “shelf research,” meaning that their results are never provided to communities, extensionists, other research institutions, and more.

Despite these challenges, there is demand and need for community-based research. The recommendation of the HICD team is to work with the institutions to develop an outreach strategy that bridges the needs of the communities with the national research master plan. This would require a series of stakeholder platforms with local communities and University researchers, as well as a process of finding and/or developing synergies between the local needs and what can be funded through national research mechanisms. Such efforts could also include a strong grant development component in order to bolster the capacity of faculty to apply for grants outside of the Ethiopian system, which may be more flexible in terms of allowing the researchers to conduct community-based research activities.

Veterinary Hospital Management Strategy – Gondar University

The new Veterinary Hospital at Gondar University provides a unique opportunity for organizational capacity development. The participants from Gondar University have concerns about management of a large-scale animal hospital because there is no such similar organization in Ethiopia, and as such, there is no model for them to follow. The HICD team recommends an effort to link Gondar University with UF Veterinary School. This would include identifying appropriate personnel at UF who could collaborate with Gondar University to develop a management plan and to assist in any training that will be necessary for the University to implement such a plan.

Enabling Environment

National Policy

USAID/Ethiopia is concerned that the delay in both funding for and acquisition of supplies and needed equipment is negatively impacting livestock research productivity. Further discussions with the mission and the possible preparation of a policy brief for the Ministry of Finance are in order.

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