



Feed the Future Innovation Lab for Livestock Systems

Cambodia: Human and Institutional Capacity Development

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The Management Entity at the University of Florida



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This brief is a work in progress. It will be updated with additional information collected in the future.

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1. Introduction

The U.S. Agency for International Development (USAID) awarded the University of Florida (UF) Institute of Food and Agricultural Sciences (IFAS) a five-year cooperative agreement to establish the Feed the Future Innovation Lab for Livestock Systems (LSIL). This country brief uses a human and institutional capacity development (HICD) framework to provide background on livestock and extension systems in Cambodia. It also provides information on educational, research, and extension capacity in livestock.

2. Educational, research and Extension capacity in livestock

The structure and organization of the educational system in Cambodia is divided into the following phases: preschool, primary, secondary, vocational, and tertiary education (WDE, 2011). Preschool education is not compulsory and caters to children from three to five years old. The educational structure includes six years of primary education, six years of lower secondary education, three years of higher secondary education, and one to three years of vocational training or four years of university education (UNESCO, 2008). According to a recent USAID report (2016), the net enrolment rates are as follows primary, 96%; lower, 34%; and upper secondary, 21%. As of 2008/2009, the total number enrolment in higher education institutions was approximately 136,400 (MoEYS, 2009; Seima, 2009), consisting 34% female enrolment (Virak & Khorn, 2008). Cambodia has 34 public and 57 private higher education institutes, which include universities, colleges, and institutes (World Bank, 2012).

The impact of the Khmer Rouge regime (1975-1979), during which a quarter of the population was murdered with educated people being especially targeted, remains the defining factor contributing to the poor state of education in Cambodia. Girls are kept out of school more frequently than boys and are expected to earn a living and provide support to the families. Gender equity in higher education is unrealistic as the pipeline for girls in education skews at the primary level to boys and continues to skew along the entire education pipeline through tertiary education. There is a gap in higher education faculty as well, in terms of age, with many young lecturers; a few older, even retired faculty; and very few at the mid or associate levels. These two gaps—gender and age—seriously impact the ability of higher education institutions in Cambodia to deliver updated curricula and prepare students for employment.

The following universities/colleges have agricultural/livestock education and Extension curriculum (InnovATE, 2014; Miranda, 2015):

1. Royal University of Agriculture, Phnom Penh
2. University of Battambang, Battambang
3. Prek Leap National School of Agriculture, Phnom Penh
4. Kampong Cham National School of Agriculture, Kampong Cham
5. Mean Chey University, Banteay Meanchey
6. Svay Reang University, Svay Reang
7. Chea Sim University of Kamchaymear, Prey Veng

The Department of Animal Health and Production (DAHP), a section under the supervision of the Government of Cambodia Ministry of Agriculture, Forestry and Fishery, is responsible for the management of livestock research and education in the country. According to DAHP website, the roles and responsibilities of the department include drafting of livestock legislation, developing standards related to livestock production and health and monitoring risks relating to human health, animal health, production and welfare, and the environment.

The Department of Agricultural Extension (DAE) holds the government mandate to develop agricultural an Extension system that is appropriate to the needs of the country (Soeun, 2012). The functions of this department include assessment of farmers' constraints, needs and opportunities; training and retraining of farmers; and development of linkages with researchers, policy makers, NGOs, and farmer's organizations (Soeun, 2012).

3. Livestock-related universities and institutes

The following section describes the main institutions offering livestock-related courses at some of the public and private higher education institutions in Cambodia (InnovATE, 2014).

Royal University of Agriculture

Royal University of Agriculture (RUA) is an administrative public education institution founded in 1964 (InnovATE, 2014). Unlike many agricultural universities globally which operate under a ministry of education, RUA in Cambodia is under the Ministry of Agriculture (MAFF). The university offers associate, bachelor's, master's and doctoral programs and have 5000 to 6000 students enrolled (InnovATE, 2014). According to the RUA's website, the university has ten faculties: Agronomy, Veterinary Medicine, Animal Science, Forestry, Fisheries, Agricultural Engineering, Agricultural Economics and Rural Development, Agro-industry, Land Management and Land Administration, and Rubber Science. The following courses are taught at the graduate level: Agricultural Science, Animal Science and Veterinary Medicine, Renewable Natural Resources, Aquaculture and Aquatic Resource Environment, and Agricultural Economic Development (InnovATE, 2014). The graduate school of Agricultural Science offers a research doctorate, a GIDAR master (Integrated Management of Agricultural and Rural Development), special bachelor and associate programs, and, an associate program in agri-education for Extension. The doctoral program is comprised of a 72-credit curriculum with 24 major specializations. The GIDAR master has a 54-credit curriculum. The special bachelor and associate programs are designed for government officials with significant years of experience. The graduate school has an array of facilities and resources, such as computer lab with access to Internet; a demonstration farm (with a one-hectare farm consisting of orchard, vegetable garden, plot and glass house for rice research, pig house, chicken house, duck house, fish pond, and biogas plant); a video conferencing room; and a library. The Hun Sen Research Center at RUA helps to build capacity in the agriculture sector (InnovATE, 2014). With respect to animal sciences and veterinary sciences, requests have been made to establish master's programs in these areas, but due to the absence of qualified faculty and lecturers, there are still no approved master's level programs for this coursework. This hampers admission into the doctoral programs, which require master's degrees. The Department of Veterinary Medicine (DVM) program is being changed to a 4 year (BSc) plus 2 year (Msc) program, which will incorporate significant clinic experiences.

University of Battambang

University of Battambang (UB) was founded in 2007 to provide access to higher education and services to rural residents of northwestern Cambodia and environs. This is the only university located in the USAID zones of influence. According to the university's website, the academic programs offered are short-course training (less than one year), bachelor's (four years), master's (two years), and doctoral (three years) programs. Two of the five faculties offer agriculture courses: agriculture and food processing (horticulture, animal science and veterinary medicine, fisheries/aquaculture, and food processing), and sociology and community development (economics, agribusiness, rural development, and law). As shown on the university website, the facilities and resources include a plant tissue culture laboratory (largest in the country), an animal science laboratory, a fish and frog breeding laboratory, a microbiology laboratory, a research and development center, and a research and training farms.

Prek Leap National School of Agriculture

Prek Leap National School of Agriculture (PNSA) is a nonprofit public higher institution founded in 1950. The institute offers 22 training courses in agriculture. Some of the courses include agricultural extension; agro-forestry; farmer field school management; animal raising techniques for chicken; pig and cattle; socio-research methodology. The institute also offers an associate program (two years), and a bachelor program (four years). According to a recent survey (Miranda, 2015), the first program offered by the institution was a two-year Associate Degree in Animal Science and Veterinary Medicines in 1982. Associate degrees are offered in the following topics: agribusiness/economics, agricultural Extension and rural development, agronomy, animal health and production, fisheries, food processing, forestry, and horticulture. Bachelor's degrees are offered in agricultural economics; agricultural Extension and rural development, agricultural management, agronomy science, animal science and veterinary medicine, aquatic resource management and aquaculture, forestry science,

horticulture, and food technology. According to the university website, the two major ongoing projects in the institute are Sustainable Rice Fish Integration and Building Climate Change Food System.

Other institutions of interest offering agriculture courses are Kampong Cham National School of Agriculture (KCN) in Kampong Cham Province, Mean Chey University (MCU) in Poi Pet Province, Svay Reang University (SRU) in Svay Rieng Province, and Chea Sim University of Kamchaymear (CSUK) in Prey Veng Province. The classroom and library facilities available in these institutions (and the ones previously described) are shown in Tables 1 and 2 (Miranda, 2015).

Table 1 Classroom Facilities in the Institutions

Institution	Whiteboard	Air condition	Internet access	Overhead projector	LCD	Fan
RUA	√	√	√		√	√
PNSA	√	√	√	√	√	√
KCN	√	√		√	√	√
MCU	√		√	√	√	
UB	√	√	√		√	
SRU	√		√		√	
CSUK	√		√		√	√

Table 2 Laboratory Facilities in the Institutions

Institution	Faculty Library	E-library	Internet access for E-library	Internet access for staff	Internet access for students
RUA	√	√	√	√	√
PNSA				√	√
KCN					
MCU		√	√	√	√
UB				√	√
SRU				√	√
CSUK		√	√	√	√

4. Agricultural Extension organizations

Extension activities in Cambodia started in 1957 but began operating on a full scale in 1986 when an Extension office was created within Ministry of Agriculture Forestry and Fisheries (MAFF) and with the establishment of the Department of Agricultural Extension in 1995 (GRAF, 2016). In 2015, the MAFF published the Agricultural Extension Policy in Cambodia in order “to organize, strengthen, and support mechanisms, regulations, human resource development, techniques and technology development, and methods and approaches for delivering agricultural Extension services in order to meet farmers’ needs and market demands” (MAFF, 2015).

The following are the Agricultural Extension organizations operating at different capacity levels in Cambodia (Soeun, 2012).

Department of Agricultural Extension (DAE): The Department of Agricultural Extension operates at the national level and is responsible for Extension program management and Extension policy development and for

providing technical support to Extension officers at provinces and districts via training and mass media production. The Department of Agricultural Extension, designs poverty reduction programs to improve food production and income generation via improved livestock and crop productivity, and improved nutrition and health awareness. These programs are implemented by the field agents.

Provincial Departments of Agriculture (PDAs): These departments operate at the provincial level. They serve as a link between DAE and district Extension personnel and district agricultural offices (DAO). PDA coordinates activities of DAO to ensure that all Extension services are effectively implemented and transferred to the farmers and other communities in the district or village level.

District Agricultural Offices (DAOs): These offices are responsible for transfer of Extension services to the farmers in the villages. They ensure coordination of Extension programs with community development plans.

Subject Matter Specialist Departments/Institutions: These departments and institutions provide technical training to Extension workers at provincial or national department level. These departments include technical departments in the Ministry of Agriculture, research institutes, universities and colleges. They are also responsible for creating Research Extension linkages and training district staff members.

Field Extension Agents: These include private Extension service providers. For instance, some nongovernmental organizations sponsor projects, such as Agricultural Quality Improvement Project, funded by Australian Agency for International Development, provide Extension services to farmers. Some private firms, such as British-American Tobacco Cambodia, Angkor Kasekam Rongroeng and Bandanh Kaksekar, are also involved in Agricultural Extension through contract farming. The majority of agricultural personnel in Cambodia work at the provincial level (MEAS, 2011). The field extension staff are still predominantly male as shown in Table 3 and could possibly result in female farmers not receiving the extension services they need. However, this need will need to be researched further.

Table 3. Gender Distribution of Extension Service Staff in Cambodia

Extension staff according to gender	Male	Female
Senior management staff	46	12
Subject matter specialists (SMS)	49	17
Field level Extension staff	1000	120
Total	1095	149

Source: IFPRI/FAO/IICA Worldwide Extension Study, 2011

The following are some of the projects supporting livestock and Extension capacity development in Cambodia:

Korean Agricultural Policy and Experiences for Food Security

The main objective of this project is to support developing countries, such as Cambodia, in creating enabling agricultural policies for enhanced food security. The goal is to improve access and better use of technologies by farmers in Cambodia. The components of the project include the following:

1. Improve agricultural Extension System and Service by developing agricultural Extension policy and Extension system.
2. Develop Agricultural Extension materials through various means; for example, TV programs for ten different agricultural technologies, CDs that contain agricultural technologies, and copies of Extension guidelines.
3. Develop of capacity building program by training Extension officers, commune Extension workers, and farmers.
4. Monitor and evaluate programs and produce annual reports and a final workshop.

Agricultural Services Programme for Innovation, Resilience and Extension (ASPIRE)

This project, sponsored by International Fund for Agricultural Development (IFAD), started in 2015 and will continue through 2022. The goal is to reduce poverty among smallholder farmers in Cambodia. According to the website of IFAD, ASPIRE will have four major components:

1. Evidence-based policy development.
2. Capacity development for Extension services.
3. Improved Extension services.
4. Infrastructure to support climate-resilient agriculture.

Cambodia-Australia Agricultural Extension Program

This multimillion-dollar project, sponsored by the Government of Australia to increase household cash incomes of farmers by developing a sustainable agricultural Extension system, was completed in 2007. Some of the livestock-related projects included the Agricultural Land Law Formulation and the Formulation of National Policy and Strategy on Livestock Production (2011), and the Agriculture Livelihood Improvement through Village Empowerment (2014).

Heifer International Cambodia

Heifer International, which began work in Cambodia in 1984, is committed to ending hunger and poverty in many underdeveloped countries in the world. The goal of this project is to build a sustainable livestock industry to improve the health, nutrition, and economic needs in Cambodia. Heifer Cambodia works to improve productivity of small farmers, as well as to provide access to markets. Heifer provides opportunities for families to produce food from their own resources in cost-effective ways. The following are some of the services Heifer provides:

1. Sustainable agricultural production and nutrition, such as improved swine and native chicken production, vegetable/kitchen gardening and organic farming, consumption of vegetables and animal product.
2. Post-harvest management and processing.
3. Market development through the development of value chains and capacity building for marketing and financial management for self-help groups (SHGs) and cooperatives and farmer associations.
4. Improvements in technology such as breeding and selection, swine feeding techniques, and artificial insemination.

French Agricultural Research Centre for International Development (CIRAD)

This French mission-oriented research institution is aimed at tackling international agricultural issues. CIRAD is working with research organizations and universities in Cambodia to solve some common agricultural development issues. In Cambodia, CIRAD is involved in creating sustainable farming and alleviating poverty. The CIRAD Cambodia team has expertise in agronomy, animal health and epidemiology and applied mathematical modeling. The main areas of involvement include the following (CIC, 2014):

1. Support to agricultural development in Cambodia.
2. Epidemiology of emerging and transborder animal diseases.
3. Food security and sanitary quality.
4. Rubber plantation and agronomy.

Consultative Group for International Agricultural Research (CGIAR)

While engaging in research in food security, this group focuses on sustainably increasing the productivity of small-scale livestock and fish systems to make livestock products and fish more available and affordable in the developing countries. A livestock related project under this program, “Improved Forage-Based Feeding Systems for Smallholder Livelihoods in the Cambodia-Laos-Vietnam Development Triangle,” operated for three years and ended in September 2015.

5. Livestock support organizations in Cambodia

Centre for Livestock and Agriculture Development (CelAgrid)

CelAgrid is the major livestock support organization in Cambodia. According to its website, the organization was established in 1997 and comprised a group of young scientists with desire to help improve the livelihood of farmer communities through improved and innovative agricultural practices. The activities of the CelAgrid include organizing training courses and workshops for livestock farmers, and conducting livestock research studies. CelAgrid has collaborations with the following organizations and universities:

1. Khon Kaen and Chang Mai universities in Thailand
2. Universities of Hue, Cantho and University of Agriculture and Forestry (UAF) in Vietnam
3. National Agriculture and Forestry Research Institute of Laos (NAFRI)
4. Swedish University of Agricultural Sciences (SLU)
5. Swedish University of Agricultural Sciences (SLU)
6. International Livestock Research Institute (ILRI)
7. Farmer Livelihood Development (FLD)
8. United Methodist Centre (UMC)

Agronomes et Vétérinaires Sans Frontières (AVSF)

This a nonprofit organization located at Phnom Penh, Cambodia, is involved with 80 development projects with smallholder families in many countries in Africa, Americas, and Asia, according to its website. AVSF started its work in Cambodia in 1991, supporting the Royal University of Agriculture in Chamkar Dong. Since 1991, AVSF has trained many village animal health workers to offer veterinary services to smallholder farmer communities in Cambodia. The organization also trains smallholder families in improving animal production practices. AVSF has partnership with the following local authorities, as well as national and local public services:

1. Associations of Village Animal Health Agents from Takeo
2. Agricultural Development Action (ADA)
3. Academy for Educational Development (AED)
4. Centre d'Etude et Développement Agricole au Cambodge (CEDAC)
5. Cambodian Red Cross (CRC)
6. Department of Agricultural Extension (DAE) of the Ministry of Agriculture, Forestry, and Fisheries
7. Department of Animal Health and Production (Ministry of Agriculture)
8. Federation of Cambodian Farmer Organizations for Development (FCFD)
9. OCKENDEN Cambodia
10. Nexus – Carbon for Development network
11. Vétérinaires ruraux du Cambodge (VRC)

6. Livestock-related capacity development needs

Pressing needs within Cambodia's agricultural education and training (AET) system include curricula revision, as well as review and revision mechanisms to keep curricula updated over time (James et al. 2014). James et al. also name several skills that college graduates lack, as identified by employers, including decision-making, task management, and analytical thinking skills.

In accordance with these observations, Cambodia's Royal University of Agriculture has identified the following constraints to its ability to achieve its full potential: (1) difficulty retaining qualified faculty members; (2) maintenance of a curriculum that is adapted to current job needs; (3) adaptation to changes in agricultural practice; and (4) low retention and graduation rates, especially of female students (innovATE, 2016). In addition, the World Bank (2012) notes that the courses offered at RUA do not align with the skill sets needed by agricultural workers. InnovATE (2016) suggests that several of these limitations could be ameliorated by creating stronger linkages between RUA, the private sector, and nongovernmental organizations; in other words, "treating AET institutions as collaborating components of a single system" (p.4). The vice rector for RUA has expressed the intention to move RUA from a teaching institution to a research institution, which will require a significant level of human and institutional capacity development.

Additionally, stakeholders from key livestock-related institutions in Cambodia identified several priority needs relating to HICD during meetings with LSIL staff members in Phnom Penh in July 2016. For example, they mentioned the need for trainings for Village Animal Health Workers. Topics for these trainings could include competencies relating to animal production and animal health, professional association development, gender-sensitive programming, and development of a continuing education curriculum. Expanding university capacity was also noted as a priority, with several specific foci: promoting a shift from a teaching institution to a teaching and research institution, expanding internship opportunities for applied research, improving graduate student training (especially in PhD programs), and promoting faculty development and leadership training.

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