



Innovation for Agricultural Training and Education

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Trip Report: Cambodia

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Team Members Present:

Innovation for Agricultural Training & Education (InnovATE) Scoping Mission Team

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Purpose:

This trip, conducted in cooperation with Michigan State University's Global Center for Food Systems Innovation (GCFSI), served as a scoping visit to meet with various stakeholders involved with Cambodia's agricultural education and training (AET) system. The purpose of this scoping mission was to collect and synthesize data about the Cambodian AET system in order to inform USAID-Cambodia and discuss potential investments for capacity building in the AET system, in support of agricultural workforce needs. A supporting goal of the visit was to discover and share with the wider global AET community lessons learned and good practices that promote agricultural training and education system development. An analysis was performed to identify Cambodia AET's present weaknesses and potential opportunities that InnovATE, GCFSI, and the USAID Cambodia Mission can pursue to support and build sustaining capacity.

Specific objectives included:

- 1) Assess and understand the current agricultural education and training system in Cambodia
- 2) Evaluate the landscape of current stakeholders, including donor-funded programs in Cambodia focused on the AET-workforce development continuum
- 3) Initiate dialogue regarding possible mechanisms to attract young people to agriculture-related career paths
- 4) Develop recommendations for AET capacity development

Sites Visited and Description of Activities:

Key sites visited by the scoping team included: Royal University of Agriculture (RUA), Prek Leap National University of Agriculture, Ministry of Education, Youth, and Sport (MoEYS), Ministry of Technical and Vocational Education and Training (TVET), Ministry of Agriculture, Forestry and Fisheries (MAFF), and the USAID Cambodia Mission.

University visits were focused on round table discussions regarding the present state of Cambodia's AET system, weaknesses, and opportunities for InnovATE and GCSFI support. RUA and Prek Leap staff identified a variety of needs and opportunities regarding improvement of their capacity to provide quality AET. A focus group with AET-related NGO representatives was facilitated to capture their impressions of the current AET landscape in Cambodia and their ideas on future directions. Additional focus groups of mid-career agricultural sector employees, and current-and recent graduates of AET institutions were facilitated in order to capture a sense of how well their training prepared them for success in the workplace, and what necessary changes in their AET would have better prepared them to meet workforce demands.

Opportunities:

The needs of the AET system in Cambodia are extensive, from physical infrastructure and information technology, to the academic curriculum, the upgrading of the quality of faculty, reforming higher education administration and governance, and effective international engagement. However, modernizing and strengthening the AET system in Cambodia will require more than just upgrading laboratories, classrooms, and related physical infrastructure. The more pressing need is to re-establish across the spectrum of AET organizations a new type of totally integrated living-learning academic experience that generates fertile discourse and critical academic engagement outside as well as inside the typical academic classroom. Despite the many challenges, there is a very high level of energy and enthusiasm for addressing Cambodia's pressing AET needs among governmental leadership, administrators, faculty and students.

While Cambodian AET institutions vary widely in capacity and performance, there is great opportunity for improvement through implementation of even small-to-moderate changes and modest sustained investment. Continued assessment of needs and opportunities for reforming and reinventing AET programs and institutions to reflect the current realities will go a long way toward building lasting human and institutional capacity that will continue to operate after donor funding has ended. Commonly cited opportunities include, but are not limited to:

- Developing training relevant to off-farm elements of agricultural value chains, including agricultural policy, support services, environmental management, and food safety issues is important in the long term.
- There is a need for public/private sector buy-in to build an improved agricultural extension system that would serve the needs of Cambodian farmers. This effort could include universities, technical schools, ministries and the private sector, and would build upon ongoing efforts to create a more decentralized, farmer-led and market-driven extension system. New and current extension workers are in dire need of relevant, hands-on training. One-year accreditation programs or short courses could be developed to meet this need. Workers and students graduating from these shorter programs could also

matriculate into AET institution degree programs. Experience in the field could act as an internship or course credit to promote further education. Opportunities exist to partner with innovative outreach projects such as the public-private training program developed in Siem Reap Province by GIZ and East-West Seed. These efforts could show immediate impact in the USAID Mission efforts to build the horticultural value chain.

- Expanding attention beyond the university setting and investing in other aspects of agricultural education may be better able to promote private enterprise growth and allow AET investments to be well-positioned to make meaningful contributions to economic growth and development. Adult learning opportunities are needed for farmers and farmer groups to connect with agricultural university short course trainings.
- AET institutions such as RUA, University of Battambang and Prek Leap would benefit from improved linkages with a variety of private and NGO organizations engaged in agricultural development projects. Projects such as HARVEST and Horticulture Innovation Lab could directly contribute to AET curriculum revision and other needed reforms.
- There is a growing demand for skilled labor (people with technical skills) in Cambodia. Many local and foreign firms report skills as a major constraint to growth. Employers identify a structural imbalance in skills supply, including a shortage in Technical and Vocational Education and Training (TVET) graduates as compared to those who graduate from a university. Employers also acknowledge that students graduating from both university and vocational training are graduating with the wrong skills.
- Conducting studies to predict a large gap in new experts to the field of agriculture, to spawn renewed interest in global AET investment. This presents an opportunity to produce a new generation of bright and dedicated practitioners in the field who will bring an entirely different skill set and mentality to the table.
- Need to adapt to upcoming ASEAN university standards set to be implemented in 2015. This indicates that primary and secondary AET need to support upcoming tertiary ASEAN specific education curricula guidelines. Curriculum development tools at major AET universities should focus on updating curriculum to 2015 ASEAN standards.
- Bridges between private sector, NGO and universities will foster improved, more pertinent curriculum for increased job placement and success. The majority of NGO representatives identified a major disconnect within the Cambodian AET system regarding provisioning students with adequate skills for agricultural sector jobs. A renovated curriculum, which integrates hands-on training and private and NGO sector experience may help bridge this disconnect.
- Student exchange programs: both for Cambodian students to gain valuable, competitive work experience as well as foreign students visiting Cambodian universities to promote university collaborations.
- Advances in Information and Communications Technology (ICT) technologies can be harnessed in order to bring more cutting edge and effective AET to local populations. This may take the form of distance learning, real-time market information, or pest management support services via Short Message Service (SMS) texting, smart phones, etc. More integration of technology into AET will not only supply farmers with current, competitive information but also promote the agriculture sector youth who are focused on other, more attractive industries.

- Accurate data is lacking regarding where students graduating from Cambodian AET institutions find employment. Tracer studies to identify AET student placement and outcomes would help inform curriculum development decisions and support the establishment of universities' career services.
- After decades of civil strife, Cambodia is on the road to economic recovery. Annual GDP growth is consistently exceeding 7% annually.
- English as second language needs improvement to be competitive in university settings abroad and for post-graduation work. Also, English competency needs can be paired with grant writing trainings and university policies to be competitive at soliciting foreign research funding.
- Training in monitoring and evaluation of teaching and effective pedagogy will promote better curriculum standards. By enabling local universities/institutions to learn the process of curriculum development, there will be lasting capacity after an AET development project concludes.
- A high percentage of AET graduates who find employment do so within government or NGO's. A better integration strategy between government, NGO, and private sector is needed in order to train students with practical and relevant skillsets for placement in these job markets.

Weaknesses:

Agriculture is and will remain an important industry to Cambodia's development, as the agriculture sector contributes 30% of Cambodia's GDP and employs the majority of Cambodia's population. However, agricultural and technical training is of an uneven quality and quantity, despite the importance of agriculture to the economy. There are weaknesses in Cambodia's education system, at the pre-university and university levels as well as in the vocational and non-formal education sector. The needs for increased English language capacity, upgraded agricultural curricula, teacher training, lower repeat/drop-out rates, infrastructure development, and up-to-date equipment all remain obstacles to improvement.

These challenges have resulted in a significant gap between the skills with which students graduate and the skills that are being demanded by employers. In Cambodia, a priority for InnovATE may be able to help connect vocational and technical schools and agricultural university graduates with potential employers by identifying pathways through which increased dialogue can occur and by informing educational institutions of the skills demanded by employers. InnovATE may also be able to work in conjunction with faculty at Cambodian educational institutions, in particular RUA, in order to update and upgrade agricultural curricula, develop a "teaching & research" culture and create English language certification programs.

Interaction with a broad base of AET stakeholders revealed that the need for relevant and basic AET improvements is massive. Common weaknesses and needs included but are not limited to:

- English language proficiency needs to be developed in staff and students to increase regional integration. There is an English language center at RUA that could be strengthened to address this, which in turn would make the large body of English based AET course material more accessible to students.

- Curricula need to be upgraded. RUA has been run under several different systems in the past (Russian, Japanese, French, Khmer, etc.), so curricula is disjointed and outdated.
- The extension system in Cambodia is very weak and ineffectual. The USAID HARVEST Program has made inroads in private sector extension but the public sector and AET institutions need greatly increased engagement.
- Infrastructure upgrades related to a variety of specific AET programs remains a significant challenge. Several key labs need to be upgraded. Certain facilities need new equipment, and staff members need to be trained on how to properly utilize new equipment and integrate the technology into the curriculum.
- Pre-university education needs to be better linked with university-level education. Secondary schools in Cambodia typically have a “life-skills” program as part of their curricula, under which agricultural knowledge could be taught, but often is not. There is a need to develop methods that integrate agricultural education into pre-university-level education in Cambodia so that all students entering RUA (and other universities for agricultural programs) have some standard agricultural knowledge prior to university education.
- Practical skills and research skills are lacking in students and staff. There is a need to incorporate theoretical courses with practical projects, as well as to pair research methods courses with opportunities for research.
- Inadequate motivation and funding to attract quality Cambodian AET instructors. Many university professors are one to two years out of their own bachelorette education. This type of system promotes short-term appointment of instructors who have varying degrees of capability. Hence, student curriculum is not consistent across instructors or from year to year.
- The need for better lab equipment and training, with consistent scholarship to promote innovation and access. This includes better qualified Cambodian professors, who are available to the students and retained for more than the present norm of 2-4 years.
- Cambodia faces pressure to catch up with other ASEAN nations. ASEAN education standards will not only push present capacity of AET universities beyond their capabilities, but also put graduating students in more direct competition with more advanced ASEAN students. The agricultural education system in Cambodia needs to be updated to a level similar to that of surrounding countries quickly, and RUA is a key part of this system.
- Youth disinterest in AET causes significant agriculture brain drain to other, more lucrative and attractive industries, such as information technology. For example, a plan exists to field a significant number of new agricultural extension workers, however their projected salary is less than that of factory garment workers. This reinforces the allure of non-agricultural sector jobs and illustrates systemic problems related to governmental priorities and resource allocation.
- When compared regionally, Cambodia has one of the smallest shares of students currently enrolled in TVET at the upper-secondary and tertiary levels. Existing TVET programs are of a limited quality due to a lack of skilled trainers, a lack of proper equipment/technologies, and poor building facilities.
- Quality of vocational agricultural training remains low and the engagement of the private sector is not routinely practiced, especially with agricultural producers. Across the entire agricultural education and training system, there is a huge disconnect between what is

taught to students and what skills are needed. Agricultural producers note that they cannot find Cambodians with the skills they need for the jobs they have.

- There exists an uneven quality of AET institutions. There is a need for a respected certification/accreditation system to help assure employers of the quality of training programs and student preparedness.
- The university AET system and other key sectors need better synchronization in order to restore relevance and effectiveness. Relationships need to be restored between higher education and employers, companies and research institutions. In addition, disconnects exist among higher education institutions themselves and between training providers (horizontal disconnect across skill providers) and between higher education and earlier education (vertical disconnect across skill providers).
- Students identified several issues and areas for improvement necessary to supply students with relevant skills from the AET system including: lack of research project funds to allow students direct involvement in development of relevant research skills, poor provision of ample networking opportunities for post-graduation job placement,
- Exchange programs to train in other countries (EU or US, not ASEAN) with commitment to return to Cambodia and provide teaching and/or other in country agricultural sector support.
- At Prek Leap there were farm experiments, available machinery and training, and practical skill learning, but there also was outdated equipment and lack of technology resources and the need to attract adult learners for education opportunities.
- The present AET system is not facilitating the flow of appropriate and accurate information to farmers. For instance, farmers often do not know how to use purchased or donated inputs. There is a disconnect between what technical advice NGOs/private extension and government agents are telling farmers

Suggestions and Recommendations:

Some of the most prominent problems facing agricultural education and training in Cambodia are the need for further curriculum development and staff capacity-building at schools, the development of proper infrastructure, the need for equipment and teaching materials, improvement in English language capacity, and the addition of practically-based courses to supplement theoretical classes. Additionally, a significant skills gap is evident in Cambodia when considering the skills of the workforce supply and the demands of employers. There are low numbers of graduates in agricultural science and technology despite there being a high demand for such employees. The results of this mismatch have led to high structural unemployment, productivity and economic growth constraints, and undiversified sources of growth. To close the skills gap, it is vital that linkages between higher education institutions and other sectors of the Cambodian economy (i.e. employers, research institutions, companies, early education providers, and other higher education institutions) are created and strengthened. These suggestions and recommendations, while not a comprehensive listing, offer concrete steps forward for Cambodia's AET system.

- **Increase private sector involvement.** Moving AET forward in Cambodia will require a comprehensive approach. The private sector represents an essential piece of the strategy for modernizing the system. Through increased connections with the private sector AET

can move from its supply driven model to a more viable demand driven model. Private sector will be crucial in dictating what skills the market is looking for and what knowledge will be adequately reimbursed. Increased involvement of the private sector will help bring an entrepreneurial side to AET that will help to attract younger generations to the field which will help to solve the issue of the aging expert base. Private sector participation can also help address the sustainability of USAID efforts. If private sector is involved then the AET projects will have an independent source of funding other than the international donors whose funding is always tentative at best.

- **Create and strengthen inter-institutional connections.** To close the skills gap, it is vital that linkages between higher education institutions and other sectors of the Cambodian economy (i.e. employers, research institutions, companies, early education providers, and other higher education institutions) are created and strengthened. Effective AET works through all private, public, university, and NGO institutions to build capacity and sustainability. Currently, the opportunity exists to connect with several organizations that have been doing exemplary work, which could provide models and be strengthened with USAID assistance.
- **Partner with NGOs to leverage their experience for AET improvement.** Cambodian NGOs are involved in a variety of agricultural and rural development programs and many are contributing significantly to enhance food security among the poor who live in rural areas. NGOs with whom we met appear to be successfully implementing a variety of valuable projects. Their staff are well-trained, they seem to organize and manage their programs and project activities in a very professional manner, and they are dynamic and entrepreneurial – matching programs to local needs and market conditions. The human resources and networks developed by NGOs, and their experiences, ideas and lessons learned about ways to address the challenging problems of food security in deficit areas, should be shared throughout the AET system and incorporated in curriculum development, and other training.
- **Diversify AET opportunities beyond university degree programs.** The pressing need for trained agriculture-related professionals offers the opportunity to move AET out from university campuses to a broader client base to engage in broad support of the industry. This could take a variety of forms all of which would include a more practical, applied approach to agricultural education and would likely include programs less than 24 months duration. By supporting technical and vocational schools or centers for modern agriculture that attract both experienced and young farmers as well as other youth and those already employed in the sector, these centers can bring AET knowledge to a broader audience. Such centers would cater to the practical agricultural education needs of the sector – training technicians, entrepreneurs, and farmers. This would allow the education to be demand-driven and let the trainees make themselves increasingly valuable to employers. In addition, by casting a wider net and giving more specific training the AET efforts may empower a worker to better their wage earning potential but not so great that the worker would be able to peddle the new knowledge elsewhere, as with past focus on PhD programs. This would keep the knowledge learned from the trainings at the local level where it can be of greatest benefit.

- **Update curriculum and key resources.** Like the physical infrastructure, much of the curriculum being offered in Cambodian agricultural universities is seriously outdated. Faculty lack access to the newest books and journals with which to educate themselves, as well as to update their teaching materials. The problems with obsolete curricula materials however are over-shadowed by an emphasis on rote learning and a lack of experiential education opportunities. Cambodia's AET system needs to educate students to be much more capable of critical thinking and innovation. Additionally, faculty need to be unencumbered to teach more than an assigned curriculum.
- **Strengthen partnerships with governmental ministries which have similar goals.** The Ministry of Education, Youth and Sport (MOEYS), for example would like to increase support for the provision of local life skills and vocational training and basic/required professional skills responsive to the needs of the social and labor market. InnovATE might potentially collaborate with MOEYS and AET institutions to place a strong focus on literacy and partnerships with NGOs, community centers, and other organizations in order to bridge stronger relationships to meet AET needs.
- **Increase the capacity of RUA to attract and manage outside funding.** RUA is currently engaged with donor organizations and is managing funds from outside sources such as USAID. Improving the institution's ability to efficiently managing extramural funding will improve its competitiveness going forward, and position the institution towards more sustainability.
- **Engage a new generation of agricultural professionals.** It is critical to develop a strategy and action plan to expand the understanding of how Cambodian youth perceive and interact with agriculture. Moving away from agriculture's perception of hard work toiling on a farm to cutting edge scientific research in state-of-the-art laboratories, or marketing and distribution of goods, will have greater appeal on today's technology-driven youth. The AET system and partner institutions can push to develop interdisciplinary curriculum for agriculture students that focuses not only on the more traditional aspects of farming but also business development, marketing, non-profit management, environmental issues, bio-engineering and other technological aspects. A broadened understanding of what agriculture is can open up avenues of research and understanding that will strengthen AET institutions in Cambodia and help them to be more sustainable in the long run.
- **Develop programs to link AET institutions with public and private sector employers.** This initiative could be part of a larger effort to develop effective career services for AET institutions. Positive outcomes could include a closer alignment of education and training supply with current workforce demand. A pilot program in commercial horticulture could link with current USAID investments such as HARVEST and the Horticulture Innovation Lab.
- **Enhance English language capacity.** An important element of change will be to improve the capacity of the academic staff and students to teach and learn effectively in

English. In the long-term, this will rest on the commitment of the entire education system in Cambodia to developing English language capacity. However, in the short-term, there are a variety of steps that can be taken to improve the capacity of current faculty and staff.

Next Steps:

- **Develop a ‘Center of Excellence’ (CoE) model system for sustainable AET improvement.**

Commercial Horticulture Center of Excellence – Pilot Project

To realize the vision and engage the opportunity of Cambodia becoming a net exporter of quality horticultural products, agricultural education and training (AET) institutions must develop the necessary research, education and training capacity in order to lead the way. As the flagship AET institution in Cambodia, the Royal University of Agriculture (RUA) would house the proposed Commercial Horticulture Center of Excellence (CoE). At its core the CoE would become an innovation incubator for commercial horticulture development, and would transform the RUA horticulture program into a demand-driven, responsive and efficient support for commercial horticulture production for domestic and international markets.

Commercial Hort CoE Objectives:

- 1) Develop and strengthen linkages among key components of the Cambodian AET and research system including CARDI and other educational institutions engaged in AET; network development would also extend to private sector, agriculture related NGO’s, USAID-sponsored projects, and public/private extension efforts.
- 2) Build capacity of RUA to offer educational/training programs necessary to develop and sustain the nascent commercial horticulture industry, engage in research, and offer Extension/outreach programs to develop horticulture enterprises and value chains.

A complete description of the CoE can be found in the concept note *Commercial Horticulture Center of Excellence – Pilot Project*, prepared by the InnovATE scoping mission team.

Appendix:

Trip Log:

- 1/11/14 – InnovATE team arrives in Phnom Penh, Cambodia
- 1/12/14 – Planning, refining focus group questions
- 1/13/14 – Planning, RUA, Ministry of Agriculture
- 1/14/14 – Ministry of Education, Director of Prek Leap
- 1/15/14 – Focus groups with INGO/NGOs and USAID scholarship students
- 1/16/14 – USAID mission meetings, Ministry of TVET (vocational training)
- 1/17/14 – Monitoring and Evaluation Short Course Focus Group
- 1/18/14 – Wrap up meeting and next steps at USAID Mission
- 1/19/14 – Team collecting notes and planning next steps
- 1/20/14 – Team departs for US

List of Contacts Made:

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