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Innovation for Agricultural Training and Education



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Armenia: AET Assessment Report

Strategic pathways: A preliminary assessment and menu of options for the ICARE/ATC

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Foreword on Sustainability:

The focus of this scoping report is to establish a plan for achieving sustainability of the Agribusiness Teaching Center (ATC) in the International Center for Agri-business Research and Education (ICARE). In the course of this visit, we have recognized the need to clarify what is being sustained and what form of sustainability is being sought. In talking with the range of stakeholders, we have learned that ATC sustainability is seen from different perspectives. One perspective sees sustainability as a plan limited to simply finding a funding source to replace the part of the institutional budget for undergraduate student expenses to-date provided by a grant from the USDA. This could be accomplished with government transfer mechanisms, although questions of which government (or even private donors or benefactors) would be willing to do this have been raised. Alternatively, the ATC could be privatized or integrated into another university (e.g., American University of Armenia; Yerevan State University). This raises questions of both the source of accreditation and the strings attached to financing. Another perspective is a relatively laissez faire approach involving a haphazard mix and match of short-term contracts. This is the current status quo approach which appears to overextend the ATC and its resources (staff, facilities) and thereby add little to strengthening ATC sustainability.

Viewed from another perspective, sustainability has been perceived as a matter of full integration of the ATC and its programs into the political economy of Armenian agriculture. Sustainability in this case would be based on a multi-stranded network of stakeholder institutions/clients. Such a plan would involve building long-term political and economic relationships across the agricultural sector and re-orienting part of ATC's focus toward rural Armenia. ICARE connections with partners at various stages along agricultural value chains would allow it to contribute to and gain support through a range of educational, outreach and research services. We are most sympathetic with this latter form of sustainability, but don't discount the significance of other perspectives in establishing a viable strategy.

It is also worthwhile to examine the environment within which ICARE/ATC operates. Following *InnovATE's* supply/demand analytic model we've learned that there is an oversupply of under-qualified agricultural professionals in Armenia. This quantity/quality issue is driven by government support for a large and outdated agricultural university apparatus, the Armenian National Agrarian University (ANAU). Educational and agricultural occupations are plagued by low salaries and lack of prestige. Many students from rural communities commonly move to Yerevan to study and then stay there or emigrate (to Russia and other countries). While the Ministry of Agriculture and other agencies seek qualified agronomists, plant protection, and animal husbandry specialists, they are not willing to pay salaries that would encourage pursuing such careers. Nevertheless, there is a substantial demand for highly qualified agricultural professionals. Entrepreneurs are developing new agricultural enterprises in rural Armenia.

Nearly every development project we spoke with described recruiting specialists from overseas, thereby demonstrating effective demand for these specialists at attractive income levels. Clearly the education model in place is not working. Combined with the underutilized productive capacity in the countryside, there are opportunities to concentrate resources in the development of agricultural technical specialists (in both agricultural production and processing), much like the ATC has done with agri-business specialists. What follows is our preliminary assessment of the range of options to be considered and potentially combined into a fully developed plan for ATC sustainability. We see attaining ICARE/ATC sustainability as key to the country's development, and achievable when combining several of these options.

This document was prepared for the USAID Mission in Armenia. It summarizes the work of the InnovATE scoping team in response to the mission's request for assistance in developing the country's agricultural training and educational capacity. The opinions expressed herein are those of the InnovATE Scoping Team and not of the U.S. Government. The recommendations may form the basis for USAID and other donor investment ATE in Armenia's agricultural training and education system.

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Background

The ATC was established in 2000 as a department within the Armenian National Agrarian University (ANAU), by a cooperative agreement between ANAU, the USDA, and Texas A&M University (TAMU). In 2005 the International Center of Agribusiness Research and Education (ICARE) was established to manage ATC activities (see relationship between ANAU, ICARE, and ATC in Figure 4). The undergraduate and graduate curriculums are western-structured, based on the agricultural economics curriculum of TAMU. The ATC provides agribusiness education to support sustainable entrepreneurial activities in the food and agriculture sector in Armenia and the region. It prepares agribusiness specialists armed with broad agribusiness, marketing, and managerial skills and up-to-date communication abilities.

Problem statement:

ATC lacks a long-term strategy for sustainability. Nevertheless, opportunities seem to abound for the ATC to serve the Armenian agricultural sector through increasing the quality of agricultural training and education. ATC has established a solid foundation for agribusiness management education; however, links to technological innovations in the production system are weak. Although its partner, ANAU, prepares a large number of students in the technical sciences, modern techniques required for sustainable intensification of agricultural production and processing are not being transferred. Furthermore, Armenia has little need for a large number of poorly trained agricultural professionals. Indeed, many employers lament the need to retrain graduates. There is a real demand for technical expertise in several areas including: greenhouse production, organic production, food processing, food safety, and plant protection – all necessary to ensure high volume and quality production in key value chains. We found that well-trained specialists in production and processing are in great demand and will be a key influence on shedding the residual malaise from the Soviet Era.

Brief summary and justification:

The ATC is providing critical skills valued by the private sector. Nearly every graduating ATC student (60 percent of whom are women) are either finding jobs with good firms or going on for advanced education. ATC skill development has built self-confidence, technical capacity, leadership, and a can-do attitude in its graduates. This mind-set change would be an important stimulus for the stagnating agriculture sector. However, the high caliber of these students has attracted the attention of more remunerative employers in the financial sectors of the nation, and internationally. We need to refocus student careers on emerging agricultural value chains. ATC involvement in the Agriculture Census will give the ATC a “front seat” in the identification of areas that need educational impetus. To better integrate ATC in the agricultural sector we believe the steps outlined below need to be followed.

The ATC currently relies on part-time faculty. These part-time faculty members are very devoted to the ATC mission but almost all have fulltime work or other obligations outside their duties at the ATC. They cannot help on a full-time basis to market the ATC, write proposals, conduct research or outreach activities that will contribute to the long-term sustainability of the ATC. Under the current model adding new courses means adding more part-time faculty. However, the model could be changed to include more full-time faculty who would be able to not only teach new courses, but also establish and maintain outreach programs, write grant proposals, conduct research, and lead training field trips outside Yerevan.

The move to get the Center for Agribusiness and Rural Development (CARD) and other USDA/USAID supported institutions on sustainable footing was more straightforward as they were initially designed to offer marketable services. As an academic institution the ATC is a different story. The market cost of the high quality ATC degree is beyond the means of nearly every potential student. Transforming this institution will require a more lengthy process involving multiple strategies. In Armenia, tuition is the sole source of financing for student education. Currently, the portion of the tuition that the ANAU collects from students and provides to ACT covers only about 15 percent of the total cost of an ATC education. Replacing the institutional budget for undergraduate student expenses once provided by USDA (currently 85% of the total estimated cost) will require a process that allows the time for ICARE/ATC necessary to attract private donors (or benefactors).

Our approach is to ground ATC's sustainability in the Armenian agricultural sector making it responsive to the need for sustained economic growth. To do so we propose a two-pronged strategy addressing technical bottlenecks in the agricultural sector and building a curriculum to sustainably support sector productivity growth. We will target critical value chains with an integrated strategy that both promotes their sustainable intensification as well as generates learning opportunities for students and their instructors. The resulting workforce will provide the basis for ensuring Armenian food security in the short-term and an export potential for the long term growth of the larger economy. Our approach also includes building the technical capacity of the workforce at all levels, beginning with programs in the agricultural colleges to encourage an entrepreneurial spirit along with modern technical skills. With increased outreach into local agriculture by the ATC MAB students will experience agricultural development first hand while ANAU biophysical scientists will be mobilized in collaboration with US counterparts to provide technical instruction. We feel organizations such as CARD can provide the ATC with access and a platform for the necessary outreach and training at the local level.

Methodology

Our goal for the Armenia scoping visit involved facilitating dialogue and joint learning to generate a practical strategy to sustain and build from the significant successes of the Agribusiness Teaching Center (ATC). Following our terms of reference (see Appendix H), the *InnovATE* team engaged with USAID and other stakeholders (private sector, donors, alumni, grants, etc.) in a discourse to support the ATC and its partners in building a thriving Armenian agribusiness sector. Our methodology involved (1) conducting informal conversations with key stakeholders to better understand local conditions and explore ATE opportunities for strengthening the agricultural sector, and (2) holding meetings with USAID and ATC to ground our work in local conditions and review our findings. In the process, we held over fifty meetings, interviewing over sixty individuals. Not included in this number are the participants in the nine different focus groups that we conducted.

Activities responding to the problem:

Here we present a 4-point strategy for ensuring ATC sustainability. The key component is the organization and mobilization of a comprehensive business plan. This initial phase of the strategy involves putting the ICARE/ATC house in order and mobilizing the business acumen of the ATC. The plan has three legs. The first focuses on developing a strategy to increase revenues and decrease costs. The second leg will increase linkages within the agricultural sector to better integrate ICARE/ATC with its agribusiness partners in both the private and public sectors, especially at the local level. The third re-defines ICARE/ATC so that it is more relevant to the current needs of Armenian agriculture.

1. *Designing a Comprehensive ICARE/ATC Business Plan*

- a. The first step in building ICARE/ATC sustainability includes developing an action plan for the ATC. To do so we propose engaging an outside facilitator to ensure that all aspects and possibilities are explored. The action plan will include strategic, marketing, financial, and operational plans, an organizational chart, job descriptions, and all other pieces of a comprehensive business plan. The financial plan will include a full institution-wide budget incorporating all the costs and all the income associated with ICARE activities. Planning for sustainability cannot commence until all this information is compiled in one document. This will lay the foundation for a continual process that includes budgeting and monitoring all costs and income accumulated.
- b. The action plan would be designed to implement some combination of the following options to develop agricultural production and processing capacity and a mindset at the local level that assures a higher appreciation of agriculture as a profession. This will include establishment of new certificates from universities outside Armenia for

undergraduates in agriculture production and in food processing systems, and short courses for existing practitioners – all offered by the ATC.

- c. Technical assistance to design the action plans involves:
 - i. organizing the overall strategy;
 - ii. establishing a solid financial foundation including scholarships and endowments, and sound fiscal management;
 - iii. building an outreach program establishing rural sector linkages and identifying critical needs in the agriculture sector; and
 - iv. developing a targeted research program that supports the ICARE rural outreach and education programs.

What follows in the next three sections is a menu of options. Combining these options consistent with the comprehensive business plan will ensure the sustainability of the ATC.

2. *Increasing Revenues and Decreasing Costs*

- a. **Establish an ICARE development program.** It is important that ICARE/ATC establish its ability to raise funds and increase visibility. A well thought out strategy to increase its income needs to be implemented. Hiring a development director is a first step in this direction. It will mean adding to the budget, and adding resources to support that person (travel, office expenses, etc.). *InnovATE* will provide mentoring for the director and support for establishing the office.
- b. **Establish an endowment fund.** The development director can help establish and raise funds for an endowment to cover scholarships, operating costs, and other expenses. During our discussion we learned about a legal framework for establishing such a fund. The regulations stipulate that the funds be placed in the national bank and the income is taxable. *InnovATE* has experience in establishing and managing endowment financial resources. A beginning point for soliciting start-up funds is the Armenian diaspora and businesses in the agriculture sector (i.e., suppliers of inputs, processors).
- c. **Increase fundraising for scholarships** so that the ATC can attract and retain students from key agricultural areas. These scholarships can be tied to the graduate's return to serve in rural areas. This will help ensure that local agricultural enterprises are served and that the ATC is seen as a key contributor to the improvement of the country's agricultural production systems.
- d. **Set policy to collect overhead (indirect costs)** on all contracts and agreements that include payment for the ATC's service. It is important for the ATC to retain this income to cover expenses associated with the work or upkeep of the institution. This would serve to boost ATC income through supplementing faculty salaries or provide student financial support. The need for a NICRA (Negotiated Indirect Cost Rate Agreement) for the ATC to ensure that grants can offset ATC indirect costs is an important avenue to

consider, in particular thinking about how indirect costs from ATC research may directly fund the ATC budget rather than the wider ANAU budget.

- e. **Increase the capacity of ICARE/ATC to receive and manage funds.** Innovate team will guide ICARE through a “pre-award survey” – a standard process developed by Virginia Tech based on USAID requirements so that ICARE can increase its ability to accept and manage funds. While it is already receiving and managing funds from USDA, this certification will increase its credibility and demonstrate its capacity to manage funds from other donors. The team will also assist ICARE in attaining two other high level certifications: the NATO and the DARS certifications. All three will help expose ICARE to high standards for financial management.
- f. **Increase tuition and other cost recovery mechanisms.** This will include determining the full cost of education and other services provided by ATC. Develop a plan to collect fees for each course taken. Examine the possibility to establish tiered tuition levels.
- g. **Increase government investment in agricultural education.** The Republic of Armenia government institutions are extremely under-funded, and the ANAU is no exception. During our meetings with both the Rector and Deputy Minister of Education and Science they emphasized to us that the only income that ANAU receives is tuition payment. ATC only receives part of the tuition collected for each ATC undergraduate student. Hence, under the present system of funding, financing the costs necessary for maintenance, capital improvements and other ongoing expenses is not possible.

3. *Increasing Linkages – making ATC relevant to Agricultural Systems*

- a. **Establish an Outreach/Research Office.** The ICARE/ATC has conducted short-term research by individual faculty members. Several of these projects have made great contributions to the ATC teaching program. These individual research projects offer good experience and funding for ATC student researchers. The research program needs to be formalized and expanded. The Outreach/Research office will also coordinate the outreach program with the colleges, the ASCs, CARD and other partners in the rural areas. This office is important to the sustainability of the ATC. It will establish and maintain linkages, plan and support research projects, ensure that overhead is collected from all contracts including outreach and research projects, and organize support for the teaching program through the rural centers.
- b. **Conduct joint research ventures** and trainings with CARD and other USAID investments. USAID’s investments in related projects and in other sectors have identified key areas that need investment. CARD, EDMC, and Ecoglobe have been suggested as partners in ATC activities. The EDMC can fund studies and training programs that the ATC can implement. CARD can be a partner to increase ICARE/ATC linkages through local-level training and outreach programs. These research activities will benefit greatly from increased levels of cooperation and new collaborators (such as the EU, EuropeAid, FP 7,

and SNSF, as well as *innovATE* consortium partners). Larger, multi-year research projects will help the ATC do a better job of planning. The new Outreach/Research director will help facilitate these new agreements and avenues to continued support and collaboration.

- c. **Establish cooperative innovation incubator programs.** The ATC needs to be well-grounded in rural areas to support teaching and research programs and to give students and faculty opportunities for first-hand experience with agriculture entrepreneurs. A system of 2 or 3 field labs located in the rural areas will pay enormous benefits for the ATC. These can serve as outreach field stations, learning labs, and research nodes at CARD outreach centers, Marz Agriculture Service Centers, or Agricultural Colleges. They could be modeled after Small Business Development Centers in the US. These outreach stations will help to connect the ATC to real world problems in local areas, focus research and outreach on current production, processing, and business development issues, and avail local people of the services training and education provided by the ATC. These incubators will foster the development of new agriculture-based enterprises that will contribute to economic growth, help increase market opportunities and develop value addition potential. These outposts should be served by faculty and graduate students, and could be linked to the central ATC campus through distance learning technologies.
- d. **Mobilize engagement with ANAU and Colleges of Agriculture** faculty and specialists.
 - i. Many of the ANAU and college faculty have good technical knowledge but may lack teaching skills. They can collaborate with *InnovATE* consortium faculty to build teaching and technical skills. ATC affiliating with local agriculture colleges seems a natural fit – many of whom have experienced faculty with interests relevant to long-term agriculture processing and production technologies. Working through one or more of the ten local colleges will put the ATC in touch with the needs of the rural workforce. This will provide a realistic learning environment – an experience based – for students and faculty. It will also provide access to potential students. To the collaborating local colleges the ATC will provide new technologies and modern teaching leadership.
 - ii. ATC faculty could mentor the local colleges and co-direct student teams and research projects. When local demand for technological expertise is identified, *InnovATE* will match a consortium faculty member with the appropriate ANAU, college, or ATC specialist. Working with ANAU faculty needs to be done on an individual basis, not across the whole institution. The objective is to develop the bio-physical expertise for the ATC appropriate to specific technical innovations required in the rural areas. Through this process ATC will upgrade the entrepreneurial and teaching skills of selected ANAU agricultural experts.

- e. **Establish/expand the ATC alumni network.** The alumni of ATC is growing every year and developing formal alumni association and support functions at ICARE would greatly benefit the future of the ATC. Such an association would help develop linkages with alumni that could facilitate ATC programs in the rural sector (internships, guest lectures, field trip sites, etc.). The US chapter is raising funds for scholarships; the association would help build a culture of support for ATC programs. While alumni chapters have been started in the US, Tbilisi, and Yerevan, this network could be expanded and served by the Career/Alumni Services office at ICARE. There are several activities that could be started that increase the involvement of alumni in the ATC programs.
- f. **Enhance the ICARE Career Development and Counseling Center.** ICARE/ATC needs to expand its career services center – already under pressure from ANAU to provide services to the entire university. The capacity to maintain an up-to-date data base on graduate careers and employment opportunities requires more staff. In addition, this center would be the logical place to house alumni services.
- g. **Develop long-term partnerships.** The ATC is well connected to several universities and other institutions through its ongoing programs. Some of these relationships need to be formalized and expanded. While other (new) relationships would help the ATC expand and become sustainable. The Development office and the Outreach/Research office will be instrumental in developing and maintaining ties with regional and overseas institutions. These relationships need to foster financial support and access to other resources for the ATC. For example, during our visit we began the process of developing a Memorandum of Understanding between the ANAU, ICARE, and Virginia Tech. Building on memorandums of understanding between ATC and the *InnovATE* consortium members, ATC will be able to avail itself of the help needed to increase integration with rural farming communities.

4. *Redefining ICARE/ATC*

- a. **Explore options for program accreditation.** The ATC benefits greatly from the certificate program from TAMU. Similarly the program will be greatly enhanced by obtaining accreditation from regional and overseas organizations. The linkages through the development and Outreach / Research programs will help identify appropriate accreditation. Partnerships and collaborative agreements with universities outside Armenia will also help raise the recognition of the ATC program and will help lead to accreditation of the ATC programs. But a large benefit of new accreditations is the increased credibility, ability to recruit students, and potential to recover full (tuition, etc.) costs. Gaining accreditation is very important to increasing the opportunities for the ATC. This is especially in the context of the Bologna process which dictates the need for quality assurance.

- b. **Set up an Advisory Board for the ATC** that includes Armenian agricultural businessmen and other AET stakeholders. These businessmen are the champions needed to take the ATC to a new level of performance in the Armenian agricultural sector. They will advise the ATC on curriculum priorities, new programs, and development opportunities.
- c. **Add new courses to the standard ATC curriculum.** It is important to connect ATC students (and faculty) with practical work environment and offer experiential learning opportunities, especially in food processing and agricultural production. These new courses will be experiential in nature, and include students working on real-life problems in teams in local (rural) areas (through the outreach centers mentioned above). For example, ATC student teams would help with start-up enterprises with private sector actors, and cooperatives in the agriculture sector. This group of courses would set the ATC apart from other institutions and well-ground it in the economic growth of the agriculture sector. The ATC has begun to move in this direction – a key way to make the ATC relevant to other parts of the Agriculture sector. Students’ course loads do not presently contain electives. The ATC has begun planning a set of elective courses focused in a particular area (i.e., food safety) from which students can select four courses. When adding these courses to their course work they can show a specialty. Adding to this to other specialties will help tie the ATC closer to agriculture production and processing issues and help students to meet the needs for trained manpower in these critical areas.
- d. **Leverage short-term training activities.** There are opportunities to build short-term training capacity at the ATC and use this to add to curricula over the long-term. ATC needs to leverage short-term training activities into long-term curricula. For instance, the ATC has generated collaboration with GIZ in specialized training in winemaking, which could easily be transformed into the basis for new curriculum at the ATC/ANAU. The ATC is collaborating with the EDMC on a similar basis in the area of food safety. These need to be transformed into long-term curriculum reform. This will include certificates for undergraduate and/or agricultural college students. A certificate in agriculture production and a certificate in food processing systems could be developed, as well as short courses for existing practitioners – all offered by the ATC (with support of the *InnovATE* consortium (Virginia Tech, University of Florida, Penn State and Tuskegee)).
- e. **Increase efficiencies of small landholdings.** Addressing the challenges of the breakup large landholdings at the end of the Soviet Era and inefficiencies of the resultant small landholdings is critical to the economic growth of the agriculture sector. Cooperatives seem to hold great promise for enabling economies of scale for small landowners to collaborate in marketing and production-based activities. Through its research and outreach programs the ATC can support the formation of new cooperatives and enable

the leaders of these cooperatives to build business and management skills. Increasing the number of producer and marketing cooperatives will help small landowners meet production and marketing needs. The ATC should play a supporting role for the ASCs in developing new cooperatives and support the local colleges to develop the leadership, business skills, and technical capacity of cooperatives once they are formed. ATC graduates can serve as consultants to set up and work with cooperatives much like they would with enterprises.

- f. **Leverage infrastructural opportunities for ICARE/ATC Sustainability.** A proposal for an expansion of the ICARE to house an on-campus conference center has been submitted by ICARE and TAMU. These conference facilities would raise ICARE's stature as an educational institution and could be rented out to generate income, and further the sustainability of ICARE. The private funding and donors such as the Kellogg Foundation often funded the capital investment in facilities. These facilities also offer work experience opportunities for hospitality and tourism and business students. This investment needs to be thought-out carefully. This effort will need additional staff to market these services, and maintain the facility. It will be important to coordinate the management of the center within the sustainability strategy for ICARE/ATC.
- g. **Create a Master of Agricultural Production Degree.** There seems to be need for personnel who are well equipped with adequate technical and analytical skills. Armenia has several agriculture value chains with great potential for increased domestic and new international markets. This new degree will be based on the successful agribusiness model and deliver technically qualified managers equipped to fill needs both within and outside Armenia.
- h. **Raise the prestige of agriculture professions.** The prestige of working in the agriculture sector has been declining. ATC has a winning brand name – and because of it students are attracted to studying agribusiness. Students living in rural areas are leaving to study in Yerevan and many are not studying in agriculture programs. To develop agriculture enterprises in rural areas there is great need to show that there are interesting and rewarding careers in agriculture. ATC can play an important role in increasing the visibility of the potential of the agriculture sector to rural students without having to travel to Yerevan to study. With new limited sized (ATC scale) programs in agriculture production and processing the ATC can develop interest in students and those that will support them (leaders and stakeholders in the agriculture).
- i. **Focus on import substitution.** There are several value chains that warrant further examination. Many agriculture products that are currently imported can and are being produced in Armenia. These offer opportunities for ATC involvement in research and outreach. Work in market analysis, production, and getting products to market need to be supported.

- j. **Focus on export potential.** The ATC will identify key emerging value chains and integrate the research and outreach with these products into its teaching program. While Armenia will not become a large scale agriculture producer, several products such as wine making and other organic agriculture products offer small, niche markets with potential for adding value at the local level. These are increasingly important to the ATC and examples of which are being incorporated into the ATC courses. New products with good potential need to be identified and strategies for production and reaching markets developed.

Results and Impact of activity:

We have developed a proposed Performance Monitoring Plan (PMP) that includes the key indicators addressed by the Economic Growth program at USAID Armenia. The full PMP plan is included in the Appendix I of this report. What follows is a short summary of *InnovATE* results and impacts.

The ATC will increase the enabling environment so that it is more attractive to trade and investment in the agriculture sector. A key challenge to gaining access to improved technology and markets is the lack of access to affordable credit by farmers and agriculture sector entrepreneurs. ICARE's education and outreach activities will lead to increased access to credit.

Another goal is to increase the competitiveness of the agricultural sector. To accomplish this, the ATC will need to assist enterprises with increased access to domestic and international markets. To meet this need, ICARE's contact with rural agriculture stakeholders and *InnovATE* technological specialists will increase the application of new technologies. We also will seek to increase public-private partnerships at the local (rural) level. A key indicator of success will be the number of woman entrepreneurs who begin working in the agriculture sector. A second area of focus will be improving the workforce to meet the demand for a skilled workforce by enterprises in the agriculture sector. This will be achieved by linking education with the rural labor market requirements, employing graduates with agriculture enterprises in the rural sector, and increasing the communication with private sector actors to gain input for curriculum and program development.

Appendix A: Schedule of Appointments

12 April – 3 May 2013

Thursday April 12

Tom Hammett (InnovATE Director) and Keith Moore (OIRE/VT) arrive

Friday April 13

10:00-11:00 International Center for Agricultural Research and Education (ICARE)
/Agribusiness Teaching Center (ATC) (Vardan Urutyan, Director)

11:30-12:00 American Chamber of Commerce (Diana Gazlyan, Director)

Saturday April 14

16:00-17:30 ICARE/ATC (Vardan Urutyan, Director)

Sunday April 14

14:00-15:00 Full InnovATE team (Thomas Gill, Nicola Kernaghan, and Ntam Baharanyi)
assembles

Monday, April 15

11:00-12:00 Briefing at USAID/Economic Growth (EG)

14:00-16:00 Visit to ICARE – Tour facilities, briefing on the ICARE Centers

17:00-18:00 Ministry of Agriculture (Armen Harutyunyan, Advisor to the Minister)

Tuesday, April 16

9:30-10:30 Armenian National Agrarian University (ANAU)
(Arshaluys Tarverdyan, Rector)

10:45-12:15 Green Lane NGO (Nune Sarukhanyan, President)

14:00-16:00 Ministry of Education (Karine Hartyunyan, Deputy Minister)

16:30-17:30 Harvest Promotion Center (Lilit Aloyan, Financial Analyst)

Wednesday, April 17

9:00-11:00 Center for Agribusiness and Rural Development (CARD)

(Gagik Sardaryan, Director)

11:30-13:00 (Group 1) – SIS Natural (Lusine Ghazaryan, Marketing Director)

(Group 2) – ATC faculty

15:00-16:00 (Group 1) – The World Bank (Anush Shahverdyan – Education)

(Group 2) – Career and Education Expo at the Government building

16:00-17:00 (Group 1) – The World Bank (Arusyak Alaverdyan – Agriculture & Environment)

16:30-17:30 (Group 2) – ANAU 1st and 2nd year students.

18:30-19:30 (Group 2) – MAB students

19:00-19:30 (Group 1) – Conan Peisen, USAID

Thursday, April 18

10:00-11:00 Karen Hilliard, USAID Head of Mission

11:00-12:00 USAID/EG Staff

12:00-13:00 ANAU Deans (Economics, Technology, Agrarian, and Hydrology Departments)

13:00-14:00 (Group 1) – ATC Alumni

(Group 2) – ANAU faculty (Economics, Agronomy, Hydrology, Technology and Horticulture)

15:30-16:30 (Group 1) – ATC students (Armenian students)

(Group 2) – ATC students (students from Georgia)

17:00-18:00 EDMC (Fred Levitan, Value Chain Component)

Friday, April 19

- 9:30 – 11:00 Baker Tilly Armenia (Parandzham Gevorgyan, Managing Partner)
- 11:15 – 12:45 State Food Safety Service (Abraham Bakhchagulyan, Head)
- 15:00 – 16:00 Armavir National Agricultural College (Arthur Yegmiazian, Rector)
- 16:00 – 17:00 Armavir Agricultural Support Center (Levon Alexanyan, Director)

Saturday, April 20

- 11:00-12:00 Noy Brandy Company tour

Sunday, April 21

Consolidation of notes for reporting

Monday, April 22

- 11:00-12:00 ANAU Horticulture (Ara Hovhannisyan, As. Professor)
- 13:00-14:00 ANAU Research Center of Agrarian Policy and Economics
(Samvel S. Avetisyan, Director)
- 16:00-17:00 Noyan Company (Vahe Ghazaryan, General Manager)

Tuesday, April 23

- 10:30-12:00 Agricultural Support Republican Center (Artur Avagyan, Director)
- 13:00-14:00 Scientific Center of Vegetable and Industrial Crops, Ararat (Gayane Sargsyan, Director)
- 15:30-16:30 German Development Agency (GIZ) (Aram Babayan)

Wednesday, April 24 (National Holiday)

- 8:00-10:00 Tour of agricultural areas in Ararat Valley

11:00-16:30 Tour of Areni Winery (met with owner), USDA Goat Farm, and Jermok

20:30-22:30 Agriculture Service Center-Goris (Azmik Bakunts, Director)

Thursday, April 25

9:30-10:30 Partnership and Teaching NGO, Goris (Artashes Torozyan, Executive Director)

11:00-13:00 Goris State Agricultural College (Nune Avetisyan, Director)

Friday, April 26

10:00-11:00 Yerevan Brandy (Armine Bibilyan, Vice President, Human Resources)

16:00-16:30 USAID Mission (Conan Peisen and Economic Growth staff)

16:30-17:00 US Embassy (Ambassador John Heffern and DCM Bruce Donahue)

Saturday and Sunday, April 27-28

Reviewing notes and drafting report

Monday, April 29

14:30-16:00 USDA, Caucasus Agricultural Development Initiative (Lawrence Barbieri)

18:00-20:00 ICARE/ATC (Vardan Urutyanyan, Director)

Tuesday, April 30

9:30-10:30 Ecoglobe (Nune Darbinyan, Executive Director)

11:00-12:00 World Bank Agricultural Project Implementation Unit (Armen Vanyan, Deputy Director)

13:30-14:30 American University of Armenia (Gevorg Goyunyan, Vice Pres of Finance and CFO)

16:00-17:00 ICARE/Career Placement and Counseling Center (Lusine Mnatsakanyan, Director)

18:00-20:00 ICARE/ATC (Vardan Urutyany, Director)

Wednesday, May 1 (National Holiday)

8:00-10:00 Report formulation, data compilation

12:00-18:00 Field trip to Gorni area

Thursday, May 2

11:00-11:15 OSCE High Commissioner on National Minorities (Marina Gurbo)

15:00-16:00 ICARE/ATC (Vardan Urutyany, Director)

18:00-20:00 Solar Panel Donors reception (Judith Saryan and Victor Zarougian)

Friday, May 3

10:00 – 12:00 Debriefing at USAID Mission (Conan Peisen and EG Staff)

15:00 – 18:00 USAID/EG staff luncheon

19:00 – 20:30 ICARE/ATC (Vardan Urutyany, Director)

Saturday, May 4

2:00 Depart for the US

Appendix B: List of contacts made

The Innovate Program scoping team interviewed a wide range of stakeholders during the April 2013 scoping visit (listed here approximately in the order met). This list does not include those persons encountered during focus groups – those participants are listed in Appendix C.

Name	Organization	Position
Diana Gazlyan	American Chamber of Commerce in Armenia (AMCHAM)	Executive Director
Irina Chobanyan	AMCHAM	Member Relations Specialist
Vardan Urutyan	International Center for Agribusiness Research and Education (ICARE)	Director of ICARE and Head of Agribusiness Teaching Center (ATC)
Conan Peisen	USAID Mission to Armenia	Director of Economic Growth (EG)
Marina Vardanyan	USAID Mission	Energy and Water Advisor, Environmental Officer
Jeffrey Paretchan	USAID Mission	Public Private Alliance Specialist
Beverly Hoover	USAID Mission	Program and Strategy Development
Stephen Brager	USAID Mission	Democracy and Social Reform Director
Susanna Mezhlumyan	ICARE	Deputy Director
Lusine Mnatsakanyan	ICARE Career Placement and Counseling Center	Director (ATC graduate)
Arman Asutryan	ATC and MAB program	Faculty ATC, head of graduate program and research unit; ICARE Board of Directors
Narik	ATC	Faculty member, ATC
Sos Avetisyan	ICARE/ATC	ATC editor, web master and PR Specialist
Arem Harutyunyan	Ministry of Agriculture	Advisor to the Minister of Agriculture (ATC grad.)
Arshaluys P. Tarverdyan	Armenian National Agrarian University (ANAU)	Rector
Nune Sarukhanyan	Green Lane	President
Davit Babayan	Green Lane	Staff, (ATC grad.)
Lena Tashjian	Green Lane	Certified Nutritionist and Projects Coordinator
Karine Hartyunyan	Ministry of Education and Science	Deputy Minister

Name	Organization	Position
Lilit Aloyan	Harvest Promotion Center	Financial Analyst (ATC grad.)
Sona Telunts	Harvest Promotion Center	Financial Analyst (ATC grad.)
Gevong Michikyan	Harvest Promotion Center	Irrigation Specialist
Gagit Sardaryan	Center for Agribusiness and Rural Development (CARD)	Director
Arman Khojoyan	CARD	Agribusiness Development Specialist (ATC grad.)
Lilit Grigoryan	CARD	Project Assistant (ATC grad.)
Lusine Ghazaryan	SIS Natural	Marketing Director (ATC grad.)
Armen Hakobyan	SIS Natural	General Director
Anush Shahverdyan	World Bank	Education Consultant
Arusyak Alaverdyan	World Bank	Operations Officer (Agriculture) Sustainable Development Department
Anranik Khachatryan	AmeriaBank	Head, Yerevan Branches (ATC grad.)
Artur Harutyunyan	ANAU, Biochemistry Department	Associate Professor in Veterinary Sciences
Ara Hovhannisyan	ANAU, Horticulture Department	As. Professor of Fruit Growing and Viticulture
Yuri G. Marmaryan	ANAU	Vice Rector of Education
Gagik Santrosyan	ANAU	Dean of Agronomy
Fred Levitan	EDMC	Team Leader, Value Chain/ Competitiveness Component (The Pragma Corporation)
Levon Galstyan	EDMC	IT and High Tech Senior Expert, Value Chain/ Competitiveness Component
Frunzik Voskanyan	EDMC	Senior Workforce and Enterprise expert, workforce Development Component
Yeva Hyusyan	EDMC	Director, Microsoft Innovation Center Armenia
Parandzem Gevorgyan	Baker Tilly Armenia	Managing Partner
Lusine Tadevosyan	Baker Tilly Armenia	Engagement Manager (ATC grad.)
Emma Sargsyan	Baker Tilly Armenia	Executive Assistant
Tatevik Zohrabyan	Baker Tilly Armenia	Head of Corporate Finance (ATC graduate)
Karen R. Hilliard	USAID, Armenia	Mission Director

Name	Organization	Position
Samvel S. Avetisyan	Research Center of Agrarian Policy and Economics, ANAU	Director
Vahe Ghazaryan	Noyan (cannery, juice maker)	General Manager
Artur Avagyan	Agricultural Support Republican Center	Director
Arshaluis Hairapetyan	Agricultural Support Republican Center	Head of Innovation and Education Department
Gayane Sargsyan	Scientific Center of Vegetable and Industrial Crops	Director
Aram Baayan	GIZ (German Development Agency), Yerevan	Private Sector Development in South Caucasus
Rafik Simonyan	Areni Winery (factory)	Owner and Manager
Azmik Bakunts	ASC, Goris	Director
Artashes Torozyan	Partnership and Teaching NGO	Executive Director
Nune Avetisyan	Goris National Agriculture College	Director
Armine Bibilyan	Yerevan Brandy Company	Human Resources Director
Beverly Hoover	USAID, Armenia (also met on April 19 at the Mission)	Program and Strategy Development Advisor
John A. Heffern	American Embassy	Ambassador
Bruce Donahue	American Embassy	DCM
Yesim Elhan-Kaylay	Asian Development Bank, Central and West Asia Dept.	Public Management Specialist
Lawrence Barbieri	USDA, Caucasus Agricultural Development Initiative	Special Projects Officer
Nune Darbinyan	Ecoglobe (NGO)	General Director
Gevorg Goyunyan	American University of Armenia	Vice Pres of Finance and CFO
Armen Vanyan	World Bank Agriculture PIU	Deputy Director
Marina Gurbo	OSCE High Commissioner on National Minorities	UNDP Scoping study for vocational agriculture
Judith Saryan and Victor Zarougian	Donors from the American Diaspora	Donated solar panels to ICARE

Appendix C: Focus Group Meetings Held and Participant Lists

ANAU Deans participated in meeting with Innovate scoping team on April 17, 2013

No.	Name	Position
1	Yuri Marmaryan	Vice Rector
2	Sinbat Deveyan	Dean
3	Gagik Santzosyan	Dean
4	Albert Vardanyan	Dean
5	Edward Ghazaryan	Dean
6	Mkrtich Mkitchyan	Dean,
7	Hrachik Javadyan	Dean, Agro-business
8	Ashot Aghababyan	Dean, Veterinary

Group of ATC Alumni participating in focus group meeting with members of the Innovate Program scoping team on April 17, 2013

No.	Name	graduation	Employer/Position
1	Shoghik	2006	ANAU, IT department
2	Anna	2006	Tasty Trade (poultry processing)
3	Ani Zakaryan	2007	UNDP, Project Assistant
4	Sonu Babayants	2007	UN, World Food Program
5	Anahist Papikyan	2010	Armetel CISE (cell phone)
6	Vike Grigoryan	2006	Coca Cola, marketing specialist

Focus group meeting current ATC students (3rd and 4th year) held on April 18, 2013

No.	Name	Area of interest
1	Hagle Vardanyan	
2	Gayane Petrosyan	
3	Gevnig Babayan	Management
4	Vardges Bokhyan	Environmental economics
5	Terese Kirakanyan	Accounting, audit
6	Gayne Sargsyan	
7	Sergey Kocharyan	
8	Astghik Sahakyan	
9	Ruzanna Agrvazyan	
10	Khachatur Tspnetsyan	
11	Actashes Alexanyan	
12	Lusine Grigoryan	

Group meeting with USAID Mission staff April 19, 2013 to review the innovATE program and solicit information relative to our mission with the ATC. We have contact information (business cards) for the following attendees. Other staff members also attended parts of the meeting.

No.	Name	Specialty
1	Jason McNabb	Economic Growth Office
2	Jeffrey Paretchan	Public Private Alliance Specialist
3	Haikanush Bagratunyan	Financial Sector Specialist
4	Richard Byess	Supervisory Program Officer
5	Diana Avetyan	Private Sector Advisor, EDMC
6	Stephen M. Barger	Director, Democracy and Social Reform Office
7	Beverly Hoover	Program and Strategy Development Advisor

On April 30, 2013 we conducted a SWOT analysis with ATC faculty. Those who participated:

No.	Name	Specialty
1	Anna Yeitsyan	ATC faculty member
2	Arman Asutryan	ATC faculty member
3	Mikail	ATC faculty member
4	Heghine Manasyan	ATC faculty member and Country Director of Caucasus Research Resource Centers
5	Female	ATC faculty member
6	Artashes Kazakhetsyan	ATC faculty member and Director of Aprodeco Property Development Company
7	Sos Avetisyan	ATC faculty member and PR Specialist, ICARE Foundation

Six ATC Masters of Agribusiness students on 17 April.

Eight English Language class students on 17 April.

Ten ANAU Faculty members (including: Artur Harutyunyan, Ara Hovhannisyan, and others) on 18 April.

Nine ATC undergraduate students from Georgia on 18 April.

Appendix D: Network Analysis of Stakeholders

In the course of meeting with and interviewing agricultural training and education stakeholders we attempted an informal social network analysis to determine key linkages and players in the system. Although sampling was not scientifically sound, the results of the analysis indicate certain patterns that may be relevant to take into account in any subsequent work in the sector. The ATC (as expected from the fact that they organized the initial meetings) is relatively well recognized within the system. Indeed, only a few other actors appear to be so well connected.

The analysis highlights some general patterns of relationships between different ATE-related organizations. Clusters of stakeholders are analytically identifiable. Stakeholders primarily involved with research and extension are only weakly connected with the ATC and other educational institutions, although they do have some disciplinary links with ANAU and technical departments in the Ministry of Agriculture. Similarly, we find that those whose business is focused on the economic development of agricultural producers in the rural sector are not well connected with either the ATC or with those in scientific fields of agriculture. The ATC is most closely connected with government offices and donor organizations. The Food Safety office in the Ministry of Agriculture appears to be connected with ANAU faculty, but its political orientation (reporting directly to the prime minister) seems to supersede functional links with the sciences.

While this analysis is only indicative, there seems to be a lack of awareness between key groups of stakeholders of the potentials for more integrated collaboration. While it is too early to draw any conclusions about our work with ICARE/ATC, weak connections in the AET sector may point to opportunities for new collaboration and support. One of the key activities of both the envisaged Development Director and Research/Outreach Director would be to enhance these networks, strengthening the relationships among these organizations and their leaders.

Appendix E: Skill Set Comparisons

The following lists indicate the skills that various focus groups of faculty and students identified as either being taught (by faculty) or being learned (by students).

ATC Faculty – skills taught

- Negotiation skills
- Making presentations (w/PowerPoint, too)
- How to structure a paper/report
- How to do a research project
- Differences between a research versus project orientation
- Develop a business plan
- How to look for investors
- Grant proposal writing
- Discussion and evaluation skills
- Communication skills
- How to use statistical programs
- Professional business norms of behavior

ATC alumni – skills learned

- Communication skills
- Presentation skills
- Group project skills
- Some market analysis skills
- Innovative/creative thinking skills
- Negotiation skills
- Business ethics
- Personnel management/HR skills
- Interview skills (more self-confidence, assistance with CVs, etc.)
- How to find a job, how to find funding
- First hand business skills (internships)
- Research skills

ATC MAB Students – skills learned

- Team working
- Communication skills (w/customers and w/colleagues)
- Critical thinking
- Real cases
- Conducting surveys

- Where to find information (web searches)
- Statistical program
- Ethics (for managing people and for personal behavior)

Armenian ATC students – skills learned

- Communication skills (public speaking, confidence in using English, presentations, writing reports, analytical/technical writing)
- Study skills
- Practical skills on internships
- How to find a job, how to find funding
- Teamwork
- First hand business experience – student-operated cafeteria
- First-hand knowledge of agribusiness sector – field trips and guest lecturers
- Technical skills (marketing analysis, survey methodology, statistical software)
- Research skills (project design, data collection, data collection)
- Critical thinking skills (especially in relation to the research projects they worked on with faculty)
- Knowledge about cooperatives and how they operate (new)
- Raised awareness of agricultural production and business sectors - field trips to see companies

Georgian ATC Students – skills learned

- Technical writing (multiple types)
- Public speaking (helps with English)
- Time management (under pressure)
- Computer skills (software programs)
- Statistics and data gathering
- Recognizing different banking situations
- Identify key points of information
- Reading financial statements
- Working in teams
- Research experiences

ANAU faculty – skills taught

- How crop should be grown
- How to improve crop varieties
- Plant protection specialists (disease diagnosis; identify pest; implement plant protection; select practices/chemicals; SPS practices)
- How to see differences between varieties
- Knowing the proper planting dates and methods
- Pruning procedures

- Fertilization practices
- Practical field skills on demonstration site
- New technologies for studying the environment
- Production models
- Economic methods and procedures
- Read and prepare financial statements
- Accounting assessment, prognosis, and decision-making analysis
- Tax accounting and auditing
- How to study market/market research
- What, how and why to produce various products
- How to market products
- SPS examination
- Soil science and tillage
- Agro-chemistry
- Basics of scientific research (research design and analysis of results)
- How to analyze soil composition (chemical and physical)
- How to make fertilizer; crop rotation and weed control recommendations

Appendix F: Results of SWOT exercise with ATC faculty on April 30, 2013

After an introduction to the SWOT purpose and a review of the process, the faculty members were asked to develop a list of key factors that could impact the sustainability of the ATC. Six ATC faculty members participated in the SWOT exercise. After the facilitated discussion and listing of key factors under each category, the faculty ranked the factors by distributing 10 colored dots to their priorities in the four categories. Each faculty member was asked to rank at least one factor in each of the four categories. The resulting weights (total votes given for each factor) are given in parentheses in the table below. Hence, those factors with the highest score warrant further consideration. All the comments listed by the faculty are compiled in the following table with some notes for clarification in parentheses.

At the end of this exercise, the faculty members were asked to develop a list of programmatic areas that the ATC might consider adding, and the organizational and operational needs of the ATC. It was getting late in the evening, and some faculty had to leave. Nevertheless, most of the faculty continued to provide comments and their insights are contained in the list below.

New focus areas for ATC program

1. Programmatic needs

- MBA (there is a perceived high demand for trained personnel in high contributing sectors of the economy, such as the banking and IT sectors)
- Statistics/econometrics curriculum (needed to conduct research)
- Short courses in Management (ATC could service mid-level managers)
- Business communications
- Consultancy for private sector (would help to explore new business opportunities for ATC)
- Export potential is threatened by poor government policies (limits agriculture export growth)
- Faculty, courses and programs needed to address small holdings and land fragmentation policies

2. Organizational needs

- Cooperation with outside institutions
- Replace donor-based institutional financing
- Interpersonal/inter-institutional collaboration – “new blood needed”
- Too many tasks – too few people to work on them – overly lean organizational structure

3. Operational needs

- Takes time to bring on new faculty members (at least two months) and to develop new courses

- The ANAU relationship with ATC is important until another, better model is found – it is too early to separate the two due to lack of diversified support for the ATC budget

SWOT Results for ATC Faculty*

Internal	
Strengths	Weaknesses
Diverse student body Devotion of faculty to ATC (1) ATC has a unique niche (3) <ul style="list-style-type: none"> • High quality • Agri-business Access to foreign instructors High quality instructors (5) <ul style="list-style-type: none"> • Western educated • Younger • Practicing instructors • Diverse experience Real data analysis Corruption free environment (2) Global experiences of faculty (1) Technological resources (computers, video conferencing, etc.) (3) Enabling administration Budgets for field trips Alumni network High level of student job placement Financial support (3) TAMU association (1)	Lack of networking - locked into ANAU Lack of full- time faculty (3) Lack of intra-faculty communication Small number of students ANAU graduation rules Lack of sustained financing (3) <ul style="list-style-type: none"> • Students not able to pay • Lack of scholarships Recruitment from ANAU (7) Lack of marketing and awareness of ATC (2) Dependence on ANAU (2) Procedures for quality control Underutilized research capacity Don't have development capacity (1) <ul style="list-style-type: none"> • No diaspora connection
External	
Opportunities	Threats
Research funding (3) Increasing the number of international partners (EU and US) Alumni are underutilized (4) U.S. Embassy credibility (with CARD, etc.) To build a regional education center (1) Low cost product (education) (1) Joint degree programs (3) Private sector partnerships (1)	Lack of well-paying jobs for agriculture professionals (2) Georgia education (capacity) growing – provides regional competition Lack of local and international accreditation Dependence on ANAU policies Lack of institutional sustainability (5) New ANAU programs (3) Emigration (from Armenia) of students, potential students, and faculty (and alumni?) (1) Loss of USDA (donor) funds (5) AUA more competitive Weak support to agricultural policies (1) Limited agricultural labor market (1)

* Numbers in parentheses represent the prioritized rankings by faculty during the SWOT exercise.

Reflections on the SWOT findings

The ATC faculty noted that the greatest strengths that would contribute to ATC's sustainability were high quality education, devoted faculty, the high level technological resources, and innovative instruction. Faculty also stressed the significance of ATC's market niche in agricultural education and the initial financial support provided by USDA. That ATC was corruption-free was considered very positive and contributed to an academic environment where honesty and scholarship were highly prized. The relationship with TAMU has been particularly important creating the conditions for ATC to have broad global experiences and access to a wide range of highly qualified foreign instructors.

Weaknesses identified during the analysis focused on the relationship of dependence on ANAU; in particular needing to recruit students from ANAU (many of them having low skills). This was linked to the lack of financing for quality students as there were only a few scholarships (not more than 10 per year at the undergraduate level), yet they are required to maintain a class size of 30. This has inevitably led to having some under-qualified students. In contrast, recruitment into the MAB program is not limited to ANAU graduates and this enables ATC to recruit higher quality students. Another area of perceived weakness was in the fact that nearly the entire faculty is only part-time, holding other full-time jobs. This made them less available for inter-faculty collaboration. A last weakness of ATC is the lack of a marketing effort to recruit higher quality students.

A number of opportunities for the ATC to increase sustainability were identified. They saw ways to better utilize ATC alumni for both marketing and ultimately to provide financial support. Further, they were capable of garnering more research projects which could provide financing for students. They also perceived opportunities to increase the number of joint degree programs with western universities. Potential opportunities through private sector partnerships were also perceived, as was the opportunity to build a reputation as a growing center for education in the region. Finally, they noted that the cost of an ATC education was relatively inexpensive and is attractive to students both here and in the region.

Understandably, the faculty saw the loss of USDA funding as a major threat to the ATC. Equally significant, however, was their perception that the ATC lacked institutional sustainability. Another major threat in their environment includes weak support for agricultural policies and the consequent lack of employment in agriculture. The loss of potential students (and faculty) and alumni through emigration was also mentioned. Issues of competition from Georgia or AUA were perceived but discounted.

Facilitator's observations

Listening to the discussion that this analysis provoked, one is struck by the commitment of the faculty to the ATC and its mission. However, they see progress towards sustainability as constrained by the ATC's dependence on part-time faculty for all but the most minimal administration. Even minimal coordination functions are inhibited by the fact that faculty rarely are present outside of classroom and office hours. Dependence on ANAU seems quite constraining, but provides space for the ATC and degree granting authority.

ATC's special niche and competitive advantage in agriculture based on production in rural areas is lacking. The current focus of education and training is on the development of business skills that are in high demand in the broader economy. One senses that with even the slightest reduction in resources, the ATC may be pushed out of the market by its MBA competitors. Furthermore, it has not leveraged its comparative advantage with respect to agriculture.

Appendix G: The Scoping Team's SWOT Analysis

The ATC is built a strong business curriculum and a dedicated faculty. Faculty members provide excellent roles models as competent, effective professionals, and bring a diversity of real world experiences to the classroom. The culture and practice of ATC cultivates confidence and professionalism in its students who have little difficulty finding jobs in the private sector. As a consequence, ATC is recognized as a source of quality graduates. Students enroll at ANAU solely to have the opportunity to enroll in ATC for their third and fourth years. The institutional grounding of ATC in ANAU is vital to ATC. It provides infrastructure (building) and legitimation of the curriculum through Armenian accreditation of their degree. However, the true value of the ATC education is based on the quality of instruction and the TAMU certificate.

The fact that faculty are part-time is one of the institution's greatest weaknesses. Faculty offer a range of experiences from their full-time occupations, but rarely have the time and opportunity to develop the institutional environment outside of the classroom. This weakness continues on into the administration which is also very understaffed, leading to an overly centralized decision-making structure. While the expertise of the faculty is strong in core business specializations, there is no training provided in the technical sciences of agricultural production and food processing – the foundations of the agri-business industry. To expand the curriculum so that it meets these needs will require the hiring of new faculty and staff. This also holds true for the development of an outreach program that would begin the cultivation of external support for ATC. The lack of staff is also apparent. Program opportunities are only responded to as they arise rather than as a structured part of routine activities. This leads to a growing reliance on short-term contracts, which require increased administrative support without adequate infrastructure. The relationship with ANAU also restricts the ATC's flexibility to respond in a timely fashion to new opportunities, such as recruiting a wider range of quality students and adapting curriculum to emerging needs.

The environment within which ATC operates affords a wide range of opportunities to grow and mature. The agricultural sector of Armenia presents numerous entrepreneurial opportunities. ATC's agri-business approach can provide critical leadership in developing the sector. Agricultural and technical colleges would profit immensely from collaboration with ATC faculty. ATC could provide significant mentoring in curriculum development and current technologies, as well as pedagogic practices. Linkages with the agricultural service centers and CARD would also offer students opportunities for application of their newly learned skills and faculty the opportunity research and outreach opportunities. Each of these brings with it income generating opportunities. These linkages can raise ATC's stature and show it as involved directly in fostering agricultural sector growth.

The programs of the American University of Armenia are the major competition for ATC. It, too, provides a quality product of English-language based business education. The withdrawal of USDA support will open ATC to the competitive forces of the market place where educational institutions are poorly supported by government finances. Lacking a major benefactor to fill this gap, ATC will have a difficult time maintaining program quality. Turning to the Armenian market ATC is poorly integrated into the political economy of Armenian agriculture and lacks connection to rural enterprises that are being targeted by other donor support. Resources available to ATC are likely to flee the country.

The following SWOT Table has been constructed from the synthesis of over 25 interviews and 5 focus group sessions.

Internal	
Strengths	Weaknesses
<ul style="list-style-type: none"> • Solid business curriculum • Dedicated faculty • Real world experiences brought to the classroom • Good role model for educational ethics • Good job placement of graduates • Recognized quality brand • Institutional grounding in ANAU • Certificate from TAMU 	<ul style="list-style-type: none"> • Part-time faculty • Lean administration; overly centralized • Lack of technical, biophysical expertise • New courses require new faculty • Lack of an outreach program • Lack of business plan (financial, marketing, operational, etc.) • Potential dependence on short-term contracts • Institutional grounding in ANAU
External	
Opportunities	Threats
<ul style="list-style-type: none"> • Economic growth in agricultural sector • Mentoring of vocational education and agricultural colleges • Match ATC skill sets to the needs of the agricultural sector • Diversification of income generation sources • Linkage with agricultural service centers, agricultural colleges and CARD 	<ul style="list-style-type: none"> • Programs of American University of Armenia • Lack of support to educational institutions • Lack of connection to rural enterprises • Lack of integration into the political economy of Armenian agriculture • Emigration of entrepreneurial resources • Lack of recognition of careers in agriculture • Limited jobs for ATC graduates in current agricultural sector market

Appendix H: Terms of Reference

To: The USAID Mission in Armenia Submitted by
The Virginia Tech InnovATE Project Management Entity
For: Scoping Visit to Explore Opportunities for Developing
The ATC Strategic Plan for Sustainability

InnovATE will facilitate the dialogue and joint learning necessary for generating a practical strategy to sustain and build from the significant successes of the Agribusiness Teaching Center (ATC). To accomplish this, *innovATE* will engage with USAID and other AET stakeholders conversant with agricultural training and education in Armenia. Together we will design a plan to place ATC on a sustainable foundation that is responsive to the needs of employers and the future of the agricultural sector. Specifically, *innovATE* will help define the ‘next steps’ for the ATC in the context of Armenia’s agricultural sector and the region while identifying interventions that USAID and other stakeholders can use to support it.

The ATC has already demonstrated its capacity to produce market-valued human resources (Litzenberg et al. 2011). Consequently, the guiding question for the *innovATE* assessment of ATC is: What is now the role for the ATC in building the competitiveness of Armenia’s agricultural sector, how could it be modified to be more responsive to the sector’s needs, and how will it be supported in the future? Sub-questions include: What are the broader managerial, technical, and vocational strengths and weaknesses of the agricultural sector? Is the educational policy environment ready to meet the needs of the agricultural sector? How can the International Center for Agribusiness Research and Education (ICARE) build the private sector constituencies that will support continued funding and professional improvement of the ATC?

This scoping visit will focus on understanding the current and future demand for human resources in the agricultural sector through interviews and data collection with a wide range of stakeholders. While certain to include USAID, ATC and its partner Centers within ICARE, and the Armenian State Agricultural University (ASAU); it also may include: Center for Agribusiness and Rural Development Foundation (CARD), selected value chain actors, micro, small and medium enterprise (MSME) and agribusiness employers, ministry of agriculture, research and extension institutions, farmer organizations, and NGOs.

The scoping team will obtain information on the ATC and its clientele with the dual objectives to: (1) better understand policy makers’ visions for the agricultural sector, and (2) identify avenues of support for ATC among agricultural sector employers. As an overview exercise and

potential prelude to more in-depth design phase or other activities, the scoping team will identify data sources, strategic plans, stakeholders, key informants, and lead actors to describe overall system strengths, weaknesses, opportunities and threats.

Methodology

Prior to the scoping visit preliminary desktop research will be done to compile background information, collect data to frame the scoping visit and further refine the field data collection priorities. The *innovATE* scoping team visiting Armenia will include one specialist from each of the four *innovATE* partners and the Program Director. During the first week of the scoping team will gather additional information about the ATC, its environment, and how it may be sustained, and will standardize the *innovATE* methodologies. After the first week, two *innovATE* Virginia Tech team members will remain in Armenia to conduct additional and follow-up interviews and data collection, compile and draft the team's report and recommendations, and present the preliminary findings to the ATC and the USAID mission. The methodology for addressing the agricultural education/jobs interface will involve meeting with a wide range of stakeholders. To ensure both data quality and scope of analysis, a set of rapid assessment tools involving semi-structured interviews, focus groups, and value chain mapping will be employed. Sample design will be critical to establishing a valid, sector-wide planning framework to be conducted later. Review techniques and analysis will involve four components (reviewed in detail below):

1. An overview of the enabling environment;
2. Characterization of ATC within the Armenian agricultural training and education institutions with special emphasis on planning for the long-term sustainability of the ATC;
3. Characterization of agricultural sector employment structure; and
4. An analysis diagnosing the needs for human capital in the agricultural sector that brings the previous two together.

Review of these four components will take place simultaneously when visiting various stakeholders and key informants, including: ICARE and its Centers (ATC, CDCC, RODC, and CETL), student organizations, value-chain actors (producers, processors and shippers), MSME and agribusiness employers, farm and community-based organizations, NGOs (such as CARD), and Ministry of Agriculture representatives, as well as ASAU (Armenian State Agricultural University), American University of Armenia, National Academy of Sciences, Yerevan Institute of National Economy. Some key actors may be the subject of return visits as we focus in on critical information. Once an overview of the landscape has been completed, the following three questions will drive the rest of the scoping team's mission:

- Which agricultural value chains have the greatest potential for growth and what are their primary constraints?
- What human resources are needed to increase productivity and profits in those agricultural sectors?
- What are the expected sources for trained human resources?

1. Overview of the ATE environment:

The ATE enabling environment will be characterized through the identification of key ATE system actors (policy makers, private sector stakeholders, ATE administrators, etc.) and mapping out their roles and relationships. The landscape will be captured by focusing on the policy framework, funding mechanisms, and an ATE system map. This overview will provide a roadmap for *innovATE's* work and ensure *innovATE* clients will understand how individual ATE institutions fit into the larger ATE system. We would be interested in learning more about the other agricultural education programs, and how they fit into the agri-business environment. For instance, are topics important to export agriculture, such as sanitary/phytosanitary issues, also addressed in the curriculums of other institutions?

2. Institutional (supply) characterization:

Much of the preparatory work required for completing an institutional characterization has been accomplished with the recent ATC program review. This will need to be verified and because of likely complementarities and synergy, additional information is needed on the other agricultural sciences housed at ASAU. Institutional characterization involves obtaining: an institution's mission statement; documentation of the curriculum; faculty qualifications and responsibilities; students and student services; infrastructure, resources and external support; and administration and governance procedures. Although it will not be possible to collect all of the necessary documentation in the short period of this scoping visit, the key data can be collected from interviews, institutional catalogs and brochures, and additional data bases should be identified by partners, USAID missions, key local informants, and other stakeholders.

3. Agricultural sector (demand) characterization:

Characterizing the professional needs of agricultural sector involves both focusing on the full range of potential employers as well as key value chains and weak links. The aspect of critical interest is a description of the employment structure along each targeted value chain (horticulture, fruits and nuts, milk, etc.) from farm input supply through production, packaging and transformation, quality assurance, transportation, wholesale and retail, and other regulatory and supporting services. Quantitative data to document agricultural employment may be obtained from agencies such as, the ministries of agriculture and labor, or World Bank and other organizations, as well as interviews and special studies.

4. Diagnosis of needs for trained human capital:

Finally, valuable interpretive data will be collected through discussions with key informants and other agricultural sector stakeholders (student organizations, producers, processors and shippers), MSME and agribusiness employers, farm and community-based organizations, NGOs (such as CARD), and Ministry of Agriculture representatives, as well as ICARE and its Centers (ATC, CDCC, RODC, and CETL), ASAU and other educational institutions (the agricultural colleges, American University of Armenia, National Academy of Sciences, Yerevan Institute of National Economy). Following the demand-driven perspective, we expect the stakeholder discussions to focus on graduate employability, productivity and expansion of the agricultural sector, and the human capital needs of private sector firms, NGOs, and government.

Outputs:

At the end of this scoping visit, the *InnovATE* team proposes to:

- Facilitate a discussion of sustainability options, including a SWOT analysis for ATC;
- Draft a ATE landscape scoping report that:
 - analyzes the sector's supply and demand for agricultural professionals, and
 - defines an action plan to place ATC on a sustainable foundation;
- Identify strategies that will seek to make the ATC more self-sustainable; and
- Provide an action plan for design and implementation activities to be covered under an associate award which we will discuss with USAID/BFS and USAID/Armenia.

Appendix I: Performance Monitoring Plan

What follows is our illustrative Performance Monitoring Plan for the planned innovATE program activity based on the results and indicators used by the USAID Mission to Armenia.

Development Objective I: Inclusive and sustainable growth enhanced.

Development Hypothesis:

“More inclusive and sustainable growth will be achieved in the enabling environment is more attractive for trade and investment and the competitiveness of targeted sectors is strengthened.”

Intermediate Result 1.1: Improved enabling environment for trade and investment

Sub IR 1.1.1: Policy, regulatory and administrative barriers to doing business decreased

Sub IR 1.1.2: Access to finance increased

- Targeting SME and rural access in particular;
- enhancing competitiveness of the financial sector and markets through . . . professional development and capacity
 - **Indicator:** number of ICARE consultations with local entrepreneurs leading to increased access to credit

Sub IR 1.1.3: More strategic management of energy and water resources

Intermediate Result 1.2: Increased competitiveness of targeted sectors

** Agribusiness targeted

Sub IR 1.2.1: Access to domestic and export markets increased

- Targeted technical assistance to rural businesses, the GOAM, and other agricultural institutions to improve productivity and develop the rural sector’s growth potential in domestic and export markets (including hospitality and agro-processing industries)
 - **Indicator:** number of ICARE consultancies with rural sector partners introducing new technologies
- Facilitate strategic partnerships on the local level between government civic organizations, and businesses to promote rural development

- **Indicator:** number of public-private partnerships established at the local level
- Benefit rural women
 - **Indicator:** number of rural women involved in agricultural businesses served by ICARE consultancies

Sub IR 1.2.2: Workforce improved to meet market demand

- Support a trilateral (government, educational institutions and private sector) alliance approach to aligning education inputs with labor market requirements
 - **Indicator:** number of studies conducted by ICARE and partners linking education with labor market requirements
- Form public-private partnerships with US and Armenian companies and educational institutions to achieve private sector demand for high caliber graduates in . . . agribusiness, and business education to support the selected value chains.
 - **Indicator:** number of graduates employed in rural sector and agribusinesses
- Assist the Ministry of Education to formulate a strategy for the development of education and training aligned with market demand with private-sector participation
 - **Indicator:** number of rural-based private sector or agribusiness stakeholders on ATC's curriculum advisory council

Sub IR 1.2.3: Productivity and sophistication of enterprises strengthened

- Increase capacity of business owners/managers, business associations, marketers and service providers to assess end markets and to address constraints in sourcing, operation/production, marketing, quality control, use of new technology, workforce, and financial management
 - **Indicator:** number of ICARE consultations with agribusiness partners that increase market competitiveness
- Increase capacity of ICARE to generate support for teaching, research, and outreach for the rural sector
 - **Indicator:** number of students by gender with internships in rural agricultural settings