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ARMENIA

Quarterly Report

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Innovation for Agricultural Training and Education in Armenia (InnovATE/Armenia)



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InnovATE-Armenia-Q4 Report from Virginia Tech/ICARE/ATC to USAID

Targeted Result – activity and task/subtask	Narrative Update on status indicators and activities - bulleted list of actions	Expected Output, Result or Impact – measured indicators
Activity 1: Design a Sustainability Plan for ICARE Foundation/ATC		
1.1 Incorporate Strategic, Marketing and Financial Plans into Sustainability Plan		
1.1.1 Implementing the sustainability plan		
1.1.1.1 Institutionalize TAMU certificate as a permanent award as opposed to a five year agreement	<ul style="list-style-type: none"> ICARE Board Members discussed the continuing use of TAMU Certificate for ATC graduates completing the western based agribusiness curriculum at their June 2, 2016 Board Meeting. Chairman Dr. John Nichols stated that a regular renewal of the MoU between ICARE Foundation and ATC incorporating specific language to address the continued use of TAMU Agricultural Economics Department certificate and logo on the ATC diplomas would be the best approach. The continuation of this certificate is dependent upon the continued implementation of high quality courses offered in English that meet US standards, with curriculum reviews at 5 year intervals. 	
1.1.1.2 Formalize new certificate in Food Safety Systems Management (FSSM)	<ul style="list-style-type: none"> On May 15-26, 2016 Zaruhi Davtyan visited Pennsylvania State University (PSU) and Virginia Tech (VT), US to study the Food Science curriculum and short courses offered at both universities, and to experience hands on lab based teaching methods. Zara participated in the development of Food Safety Systems Management (FSSM) curriculum for delivery at ATC working closely with Dr. Catherine Cutter, Assistant Director of Food Safety & Quality Programs at PSU, and Dr. Joseph Marcy, Department Head, Food Science and Technology at VT. The team is developing distinct FSSM modules to cover various important areas of Food Safety and the Management of Systems to protect food in Armenia. (See Trip report for recommendations and suggestions.) 	Annex A- Trip report to USA, Zaruhi Davtyan, May 2016
1.1.1.3 Activate the Financial Plan and Marketing/ Development Plans	<ul style="list-style-type: none"> ICARE is regularly reviewing other possibilities in the financial markets of Armenia. Capital Asset Management CJSC and Converse Bank CJSC are providing asset management services to ICARE. ICARE is applying salary buy-outs from both overhead as well as research funds. 	

1.1.1.4 Institutionalize and sign formal 5 year agreements with Rector of ANAU on facilities, utilities, tuition	<ul style="list-style-type: none"> The agreement is signed and up for renewal every 5 years. 	
1.1.1.5 Internal Review of sustainability plan (staff and board)	<ul style="list-style-type: none"> As information became available to VT financial experts, it was decided that a business plan was not possible and recommended the development of a Financial Sustainability Plan. An overview of the Sustainability Plan focused on four potential profit center goals was presented to the staff. <ol style="list-style-type: none"> <i>Academic</i>- possible increases in student numbers and tuition <i>Development</i>- funds raised for short term student sponsorships and long term endowment <i>Research</i>-potential overhead increases and more research projects <i>Fee Based Training</i>-Income generated from fees charged for agribusiness and related courses and trainings The ICARE Board reviewed the Financial Sustainability Narrative and agreed that many of the recommendations are currently being implemented by ICARE. ICARE has an investment policy and 2 asset managers are advising the fund. ICARE has had a long term goal of establishing an endowment fund and now more concrete actions are underway to establish “Friends of ICARE Armenia” as a program in cooperation with TAMU Texas Extension Educational Fund. The establishment of a 501.c.3 non-profit corporation has been found to be difficult especially moving the funds from the US to Armenia. This will be addressed in the long term but for short term, TAMU will continue to support the ICARE Foundation with access to their non-profit TEEF account which has sub account directly named for ICARE Foundation. ICARE launched and completed ATC-100 campaign to raise money for upgrade and modernization of the computer lab. 	
1.1.2 Stakeholder Sustainability Plan Engagement Event	<ul style="list-style-type: none"> ICARE Board is developing alternative scenarios and contingency plans for sustainability based on the currently operational sustainability plan. Stakeholder event will be organized when Board report is ready to review and incorporate into the Financial Plan Narrative and the ICARE/ATC Sustainability Plan (focused on 4 potential profit centers-Academic, Development, Research and Fee-based Training). 	

1.1.3 Revise Sustainability Plan based on input and present to ICARE Board	<ul style="list-style-type: none"> Delayed until VT meeting with ICARE Board to discuss alternate scenarios and potential future plans 	
Activity 2. Increase the Capacity of ICARE/ATC to Increase Revenue and Decrease Costs		
2.1. Strengthen ICARE Office of Development		
2.1.1 Video Class to Strengthen Institutional Advancement Strategy	<ul style="list-style-type: none"> Conducted by Dr. Walter Witschey in October, 2015 	
2.2. Establish Endowment Fund		
2.2.1 Assessment of alternatives for establishment of Endowment Fund	<ul style="list-style-type: none"> During his visit to USA in June, Dr. Urutyan met with OIRED Director Dr. Van Crowder. It was decided to start a program "Friends of ICARE Armenia in addition to establishing a non- profit corporation. As the tax exempted status (501.c.3) might take longer to obtain from the IRS, ICARE decided to begin awareness raising and fundraising campaigns. Establishing a program called "Friends of ICARE Armenia" without the non-profit status is a good start using current TAMU financial arrangement. VT will recruit a US based coordinator who will manage ICARE campaigning efforts in the USA. The new Friends program and the campaign coordinator will begin in fall, 2016. 	
2.2.2 Identify and contact existing and potential donors	<ul style="list-style-type: none"> A matching funds proposal was written to leverage the ATC-100 CAMPAIGN funds received for renovation and refurbishment of the computer lab to be submitted to potential supporters from Telecom industry. A proposal for establishing a Center for Academic Excellence and Student Support (CASS) was developed. The CASS assumes construction of the 6th floor on the top of the ICARE building. This proposal to ASHA was developed by VT but could not get university approval due to lack of funds for the university to manage the construction effort. The CASS is planned to accommodate classrooms, a hall, a library, an elevator, and other group learning and public spaces. The architectural plans and renderings for the CASS project have been completed by a professional architect from VT and an Armenian architectural company. Proposal will be vetted to other potential funders and resubmitted to ASHA next funding cycle with an NGO partner. 	
2.2.3 Conduct institutional advancement campaigns	<ul style="list-style-type: none"> The Institutional Sustainability Campaign was launched in April and communicated with local and international prospective supporters. 	Institutional Sustainability Campaign, Giving

	<ul style="list-style-type: none"> The Campaign was presented to representatives of California dried fruit and nut based agribusinesses in the Fresno Valley during Director Urutyan's April visit to the USA. The Campaign materials were also presented during the June trip to the USA by Vardan Urutyan and Arthur Grigoryan. The ICARE Director and the Development Director traveled to the United States (VT, Boston and New York) on June 5-22 to network with east coast Armenian agribusiness leaders. The goal of the trip was to expand the pool of prospective donors to ICARE. In Boston, a presentation and a reception was conducted with Armenian Business Network. ICARE and the Institutional Sustainability campaign were presented. The event was featured in the Armenian Mirror – Spectator: http://www.mirrorspectator.com/2016/06/16/armenian-wines-win-over-kgb-crowd-at-abn-event/. During the trip to New York City the presentation about ICARE and introduction of the Institutional Sustainability Campaign was made at Carnegie Corporation. 20 business leaders attended. Dr. John Nichols, Chair of ICARE Foundation Board of Directors gave a presentation on history of US support for ATC. Three small groups led by Dr. Urutyan, Dr. Grigorian and Dr. Nichols discussed potential funding of ATC. (See trip reports) 	<p>Opportunities 2015-2020</p> <p>Annex B - Trip Report to USA, Vardan Urutyan - April 2016</p> <p>Annex C - Trip Report to USA, Vardan Urutyan - June 2016</p> <p>Annex D - Trip Report to USA, Arthur Grigoryan - June 2016</p> <p>Presentation in Boston - Wine Making and Agribusiness Education in Armenia</p> <p>Presentation in New York City - ICARE Story of Life Transformations</p>
2.2.4 Establish Endowment Fund mechanism in both US and Armenia	<ul style="list-style-type: none"> Research on establishing endowment fund in US is continuing. Some challenges involve the moving of funds from the US to Armenia. Efforts to address barriers will continue. 	
2.3. Continue ATC Alumni Engagement		
2.3.1 Engage ATC Alumni in ATC and ICARE activities	<ul style="list-style-type: none"> ICARE engaged ATC alumni in organizing and sponsoring internships and agribusiness field visits for ATC students. Students received internships and participated in field trips with agribusiness where ATC Alumni work including Coca Cola HBC, Nicola International Ltd, Mancho Group Ltd, CARD Foundation, SEF International, Armenian Harvest Promotion Center, and HSBC bank Armenia. Students provided valuable input into their sponsoring agribusiness plans and activities in return for valuable on the job and in the field opportunities. 	

<p>2.3.2 Facilitate financial and in-kind contributions by alumni to ICARE</p>	<ul style="list-style-type: none"> • The ATC-100 CAMPAIGN is over and it collected a total amount of 5,000,000 AMD (as of June 28, 2016). The participation rate was as follows: ICARE Staff-100%, Board of Trustees-100% Faculty-70.4% Alumni-17.1%. • The rate of alumni participation is comparable to alumni contribution rates in other global universities. This was the very first ever fundraising campaign conducted by ICARE and was focused on Faculty, Staff, Board and Alumni contributions. It is not the culture of Armenian students to donate to their universities as in the USA. • Alumni Reunion invitation events were held each week for 2 months. 10-25 alumni gathered for each evening of wine tasting sponsored by the EVN and a presentation about the Campaign for ATC sustainability. They learned about the current ATC situation as they met with colleagues from their graduating classes. Many donated using the web based platform and by contributing cash to the finance manager since many young alumni do not have bank accounts and do not write checks as VT alumni would do. 	
<p>2.4. Increase Scholarship Fundraising</p>		
<p>2.4.1 Identify and contact existing and potential donors (in and outside Armenia)</p>	<ul style="list-style-type: none"> • Prospective donor files have been developed for the United States, Germany, and Italy. A VT consultant reviewed and complimented the ATC Development Office on these good data bases. The potential donor contacts are starting points to develop more extensive and validated donor lists and more personal relationships which are necessary to obtain donations. • Letters of introduction from both Texas A&M and Virginia Tech were sent to a number of agribusiness from the prospective donor list requesting a meeting with Dr. Urutyan during his April trip to California. Among them are: Alexander Petrossian, Vice President at Petrossian, Inc.; John Nazaretian, Managing Director at Corporate Synergies LLC, Steven A. Kandarian, President and CEO at MetLife Inc.; Ken Hachikian, Management Consultant at The Ivy Consulting Group, LLC; Denise G. Darmanian at Gallo & Darmanian, Esq.; Richard G. Tashjian, Principal at Tashjian & Padian, Attorneys at Law; Gary Moomjian, Partner at Moomjian, Waite & Coleman, LLP; Christopher P. Parnagian, Partner at O'Hare Parnagian LLP. 	

2.4.2 Promote funding for student sponsorships	<ul style="list-style-type: none"> During all events at ATC, brochures were distributed to show the accomplishments of ATC and offer a donation opportunity for student sponsorships 	
2.4.3 Assess local investment strategies	<ul style="list-style-type: none"> ICARE is regularly reviewing possibilities for local investment in the financial markets of Armenia. ICARE Foundation has an approved "Investment Policy." Capital Asset Management CJSC and Converse Bank CJSC are providing asset suitable management services to ICARE. 	
2.5. Increase Capacity of ICARE to Receive and Manage External Funds		
2.5.1 Begin discussion of NICRA for cost recovery and pre-award audit for USAID funding eligibility	<ul style="list-style-type: none"> Virginia Tech experts are working with ICARE to develop and approved NICRA which is estimated at around 20%. ICARE is currently incorporating the approved default overhead rate of 10% into research and project proposals. A complete financial picture is necessary to develop this NICRA. Once the approved NICRA is received from USAID as sponsoring agency, the higher NICRA may be included for future USG projects. This NICRA may be used in European and local projects as well. Currently ICARE charges the default rate of 10% with concern that they might become less competitive in project awards with higher overhead rates. 	
2.5.2 Develop fiscal reporting format for inclusion in ICARE prospectus	<ul style="list-style-type: none"> Development Director and ICARE Board Chair compiled first ever annual "2015 ICARE Foundation Annual Report." Fiscal report included in prospectus used pie chart and percentages in lieu of actual amounts. VT experts and advisor Dr. Walter Witschey will help ICARE report financials more precisely in "2016 ICARE Foundation Annual Report" 	ICARE Annual Report 2015
2.5.3 Development of ICARE prospectus and annual report	<ul style="list-style-type: none"> Very first ever annual report by ICARE Foundation was published in March, 2016. 	See ICARE Annual Report 2015
2.5.4 Establish a commercial organization	<ul style="list-style-type: none"> Currently the new Tax Code is under discussion and ICARE is waiting for the final outcome to determine what type of commercial organization is preferable to establish. Among the topics under discussion is whether or not non-profit organizations (NGOs, Foundations) may be openly engaged in commercial entrepreneurial activities. ICARE is working with its lawyers on these issues. 	
Activity 3. Increase Linkages between ATC and the Armenian Agricultural System		
3.1. Strengthen ICARE Research and Outreach Development office		
3.1.1 Explore alternative research funding opportunities	<ul style="list-style-type: none"> Pre- Proposal for GIS lab establishment submitted to APPEAR (Austria) funding in collaboration with ANAU and Department of Geoinformatics of the University of Salzburg. This joint effort will result in submission of the full proposal by December, 2016 	14,944 Euros

3.1.2 Provide business development services to small and medium enterprises, male and female farmers as required by research grant deliverables	<ul style="list-style-type: none"> CIM expert application was submitted to GIZ for ICARE to provide expertise on GIS programming, to conduct training modules for industry professionals and to contribute to on-going research activities. 	
3.2. Conduct Collaborative Research and Training		
3.2.1 Establish and conduct research and training programs	<ul style="list-style-type: none"> In collaboration with the Italian Comitato Internazionale per lo Sviluppo dei Popoli (CISP), ICARE director Vardan Urutyan conducted training on Agricultural Cooperatives for the farmers of Arjut village in Lori marz 	14 females and 13 males trained
3.2.2 Generate gross revenue from research and training activities	<ul style="list-style-type: none"> Research grant received for conducting Organic Sector Capacity Needs Assessment in Armenia in collaboration with IFOAM (Germany) 	ICARE budget received - 30,470 AMD
3.2.3 Generate indirect costs from sponsored research and training	<ul style="list-style-type: none"> Research grant received for conducting Organic Sector Capacity Needs Assessment in Armenia in collaboration with IFOAM (Germany) 	ICARE overhead - 2,770 Euro
3.2.4 Publish research studies and give conference presentations	<p>Papers Presented:</p> <ul style="list-style-type: none"> ICARE Research Director Anna Yeritsyan presented the model of efficient water reuse by the fish farms in Ararat Valley, developed by the ICARE research team within the scope of the USAID PEER project at the 20th conference of International Consortium on Applied Bioeconomy Research organized in Ravello, Italy on the 26-29th of June. ICARE research team members Narek Avetisyan and Hovhannes Mnatsakanyan presented research studies for the Armenian Economic Association's (AEA) 2016 annual meeting at the ICARE on the 18th of June. The studies were concerning farm productivity and variables that affect farm output. Jon Hanf, Artur Grigoryan, Zaruhi Muradyan. "An Analysis of the Competitiveness of the Armenian Wine Business". Presented (by Jon Hanf) at the AAWE 10th Annual Conference held in Bordeaux during June 21-25, 2016. Jon Hanf, Irina Ghaplanyan, Vahe Keushguerian, Vardan Urutyan, Aram Babayan. A "New" Wine World: The Historic World. A New Regional Concept and its Marketing Implications. Presented (by Jon Hanf) at the AAWE 10th Annual Conference held in Bordeaux during June 21-25, 2016. 	<p>Annex E – Abstract "Smart Approach to Efficient Water Resource Usage"</p> <p>Annex F – Photos from International Consortium on Applied Bioeconomy Conference</p>

	<ul style="list-style-type: none"> • Vardan Urutyan, Judith Moellers. “Willingness to Cooperate: Are Farmers Motivated Enough to Join Agricultural Cooperatives in Armenia?” Paper presented (by Vardan Urutyan) at the ICA International Research Conference held in Almeria, Spain during May 24 – 27, 2016. • Antonio Fici, Vardan Urutyan. “Current State and Development Prospects of Cooperative Legislation in Armenia”. Paper presented (by Vardan Urutyan) at the ICA International Research Conference held in Almeria, Spain during May 24 – 27, 2016. • Viktorya Ayvazyan, Vardan Urutyan. “Challenges of Voluntary Cooperation after Forced Cooperation: Case of Agricultural Cooperatives in Armenia and Serbia”. Paper presented (by Vardan Urutyan) at the ICA International Research Conference held in Almeria, Spain during May 24 – 27, 2016. <p>Papers Published:</p> <ul style="list-style-type: none"> • Jon Hanf, Victoria Marquardt, Vardan Urutyan, Aram Babayan. “The Impact of Foreign Direct Investment on the Agribusiness of Transition Countries: The Example of the Armenian Wine Business”, International Journal of Business and Globalisation, Vol. 16, No. 4, 2016. 	<p>New Strategies for Cooperatives Conference May, 2016 http://programme.exordo.com/ica2016almeria/</p> <p>International Journal of Business and Globalisation http://www.inderscienceonline.com/doi/abs/10.1504/IJBG.2016.076813</p>
3.3. Mobilize Engagement of ANAU Faculty		
3.3.1 Involve Armenian agricultural experts in collaborative research and education projects	<ul style="list-style-type: none"> • Proposal for organic agriculture curriculum development at the ANAU submitted to APPEAR (Austria) funding in collaboration with Austrian University of Natural Resources and Applied Life Sciences (BOKU). 	Total proposal budget 359,876 Euro
3.4. Increase Number of Long-Term Partnerships		
3.4.1 Develop linkages with other universities, international organizations and businesses-internships funded and MOU’s signed	<ul style="list-style-type: none"> • The Armenian Economic Association’s (AEA) 2016 annual meetings were conducted on June 17-19, 2016, jointly hosted and sponsored by Yerevan State University (YSU), ICARE, the American University of Armenia (AUA), and the Central Bank of Armenia (CBA). • The AEA Conference brought together academics and researchers from Armenia, Belgium, France, Georgia, Germany, Italy, Spain, United Kingdom, and the United States. AEA is an NGO dedicated to promoting scholarship in economics and mobilizing the best economic minds from Armenia, Diaspora and in general overseas. ICARE research team members Narek Avetisyan and Hovhannes 	<p>Conference Agenda http://www.aea.am/conferences.html</p>

	<p>Mnatsakanyan presented research studies for the Armenian Economic Association's (AEA) 2016 annual meeting at the ICARE on the 18th of June. The studies were concerning farm productivity and variables that affect farm output.</p> <ul style="list-style-type: none"> The second day of AEA Annual Conference took place at the ICARE office with 2 parallel sessions on Agricultural Economics, jointly hosted and conducted by ICARE and Leibniz Institute of Agricultural Development (IAMO) experts. ICARE has been in partnership with IAMO since 2009. ICARE Research Director Ana Yeritsyan chaired a session in the Agro-tourism Conference organized by the AUA Acopian Center for Environment on the 2nd of April at the AUA. 	<p>Conference Website http://www.aea.am/conferences.html</p> <p>Conference Agenda http://ace.aua.am/ecotourism/conference2016/agenda/</p>
Activity 4. Redefine ICARE/ATC		
4.1. Maintain Quality Education Program for Workforce and Enterprise Development		
4.1.1 Maintain quality of ICARE/ATC educational programs	<p><i>Undergraduate Programs</i></p> <ul style="list-style-type: none"> 26 undergraduate students successfully took their complex state examinations (from Marketing Analysis, Financial Analysis, Strategic Management, and International Economics, Environmental Economics, Microeconomics, Macroeconomics courses) required for graduation. 26 undergraduates received their Texas A&M certificates and ANAU diplomas during the graduation ceremony on June 1, 2016. In addition, four undergraduates received only certificates from Texas A&M University. Graduation ceremonies involved leaders and dignitaries in the Agribusiness field including the Armenian Minister of Education and Science, the German Ambassador, US Deputy Chief of Mission, Professor Jon Hanf, Head of Wine Economics Program, Texas A&M University, Professor and ICARE Foundation Board Chair, Dr. John Nichols among others. NEW STUDENTS selected for Fall Semester, 2016. New admission to the ATC undergraduate summer preparatory program has been completed. Thirty-two 	

	<p>undergraduate students successfully passed their written test and interview phases. They 32 were selected to attend the summer preparatory courses- Introduction to Agricultural Economics, Business English, Public Speaking and Computer Applications. Two of these are from Georgia, one from Batumi Shota Rustaveli State University and one from Georgian Technical University.</p> <ul style="list-style-type: none"> • UNDERGRADUATE Juniors- 32 current undergraduates (including one student from Georgia) successfully completed Spring semester and started their internships in agribusinesses, NGOs, banks and other organizations throughout Armenia and Georgia. <p><i>Internship sites include:</i></p> <ul style="list-style-type: none"> • Armenia Wine Ltd, Golden Grape ArmAs Ltd, Pepsi Cola Bottler Jermuk International, Gourmet Dourme, Nicola International Armenia Ltd, Urban Logistics Services, Coca Cola HBS, Proshyan Brandy Factory, Natfood CJSC, Bacon LLC, Tamara LLC, Sis Natural LLC, CARD Foundation, Farm credit Armenia, SEF International, Armenian Harvest Promotion Center, Austrian Development Agency, Vivacell MTS, Nairian LLC, Alliance to Save Energy, Ararat Food LLC, Yerevan Beer CJSC, Shirakamut LLC, and Economic Development and Research Center. • Two undergraduate students successfully finished their 3.5 months education at Varna University, Bulgaria through Erasmus Mundus Action 2 project and joined their class to continue studying at ATC. • UNDERGRADUATE Seniors participated in the contest conducted during the 4-day inter-university forum “Financial Innovations for National Development” within “My Financial Month” project of the Central Bank of Armenia in cooperation with the Youth Parliament (EYP) Armenia. Participants included more than 80 students from 6 universities (American University of Armenia, French University in Armenia, Russian-Armenian (Slavonic) University, Yerevan State University, Armenian State University of Economics, and the Armenian National Agrarian University represented by ATC team). • The ATC team with their topic of “Access to finance in rural communities” was the competition winner. Two of our students attracted the special attention of organizers and jury and were suggested further cooperation with EYP. 	<p>Companies agreed to pay the students for internships: <i>Shirakamut LLC</i> <i>Urban Logistics Services</i> <i>CARD</i> <i>Viva Cell MTS</i> <i>Gourmet Dourme</i> <i>SIS Natural LLC</i> <i>Hyelandz LLC</i></p>
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	<ul style="list-style-type: none"> • ATC continues to have professional orientation tours for high school students to introduce them the education opportunities of ATC. During this reporting period ATC hosted 230 high school students from Gevorg Emin High School #182 from Yerevan, Yerevan High School # 170, as well as from Dilijan, Tavush marz; Sevan, Gegharkunik marz; Mets Vedi and Ayntap, Ararat marz; Aragatsavan, Aragatsotn marz; and Vagharshapat, Armavir marz. Students were introduced to all the educational opportunities that ATC has to offer, including the international learning environment, teaching methods, culture, values and the distinctive western based curriculum and brand of ATC. This was largely the result of an aggressive policy of ANAU administration of introducing rural school children of educational opportunities of ANAU as a whole, and particularly ATC. <p><i>Masters Programs</i></p> <ul style="list-style-type: none"> • Ten MAB students successfully defended their thesis projects required for graduation. They received their ANAU diplomas and Texas A&M certificates on June 1, 2016. • 17 MAB students (including three students from Georgia) started their internships parallel to their studies. The MAB Georgian students are now spending their 8-week internship with ICARE research team, mainly busy with researching the potential export opportunities for Armenian Noyan juices (Euroterm CJSC) in Georgian market. They will later offer their recommendations to the management of Noyan Juice Company. <p><i>Internship sites for Masters include:</i></p> <ul style="list-style-type: none"> • Mancho Group Ltd, CARD, Farm credit Armenia, EV Consulting, Central depository of Armenia, ACRA Credit Bureau, Fichtner Water & Transportation GmbH Armenian Branch, ICARE, GIZ, UMCOR, Ucom, LiteSoft LLC, and Save the Children. • Thirty students, selected for the MAB program, including 6 from the Republic of Georgia, are currently participating in the 2-month summer preparatory course in Business Statistics. • Certificates of Completion were awarded to 18 of the participants in Advanced English courses completed in May 2016. The course was taught by Steven Donatelle. 	
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	<p>The program is very effective in preparing the ANAU students for admission to the ATC undergraduate program.</p> <p>Field visits</p> <ul style="list-style-type: none"> • Senior advanced field trips for investigation of agribusiness management included Masis Dzuk fish breeding company, Yerevan Beer brewery/juice factory and Royal Armenia coffee processing and packaging company. Students submitted reports for each company visit, including the company description, the competitive environment, analysis of management issues and marketing and branding strategies. • ATC students had several agribusiness industry visits to SPAYKA greenhouse LLC in Ararat marz, Biga Armenian-Dutch Joint Venture tomato greenhouse and an ostrich farm in Jrarat community, Ararat marz, Urban Logistics Services (so far the only logistic operator in Armenia), and Proshyan Brandy factory. • ATC senior undergraduate students paid a visit to HSBC Bank Armenia. The representative of HR department and Head of Branch Network of the bank introduced the history, current activities and plans in addition to presenting vacancies and internship opportunities at the bank. <p>Additional Class Modules for ATC Student:</p> <ul style="list-style-type: none"> • Agribusiness Case Studies course offered professional seminars to ATC senior students by industry professionals. Each of the modules and seminars were graded based on individual and group reports, examinations, and student presentations. • Agribusiness Project Management module, delivered by the ATC graduate and Deputy Minister of Agriculture Armen Harutyunyan from February 2 – March 25, covered Project Management Introductory Concepts, Management Framework and Processes, Initiating the Project, Planning the Project, Executing the Project, Monitoring and Controlling the Project. ICARE Armenia Director Angela Neilan helped to judge the final student group presentations with the Deputy Minister. 	
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	<ul style="list-style-type: none"> • Agribusiness Value Chain Management module was taught by Aram Babayan, GIZ Private Sector Development Program, and during April 5 – 12 period covered Agribusiness Export Procedures, Export Promotion and Trade Fairs, and Export led growth strategies in Armenia topics. • Agricultural Finance and Credits module was taught by ICARE Director Vardan Urutyan from April 19 – 26, and covered Risk Appetite and Risk Management, Ratio analysis for Microfinance topics and analysis of a case study. <p><i>Seminars for ATC students:</i></p> <ul style="list-style-type: none"> • Tourism in Armenia – In World Economics class, Dr. Artak Manukyan, an independent expert for World Bank, Asian Development Bank, UNDP and other international agencies, was invited to guest lecture for ATC senior undergraduate class on the current situation and development perspectives for tourism in Armenia. • Agricultural Development as Measured by Social Indicators Rather than Economic Criteria”- Senior undergraduate students hosted Chuck Specht as their guest lecturer who has worked for different US government agricultural development programs in Armenia for 13 years (until 2006). Based on his experience, Mr. Specht shared his views on agricultural development emphasizing on social rather than financial return on investments in this field. He explained how agricultural development programs should help to ensure the desired levels of food security and food safety, also shared some of the common challenges post-soviet countries are facing as well as USAID and other US government efforts within agricultural development programs, selection of which is based on the principle of involving as many beneficiaries as possible. • “Image Consultancy”-Astghik Chaplin, the owner of ACC Associates marketing, branding and advertising company, and a member of the International Women’s Association of Yerevan (IWAY) was invited to guest lecture for ATC undergraduate senior students on Image Consultancy. She, in particular, addressed first impression, etiquette, and vocabulary as important parts of image consultancy. 	
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	<ul style="list-style-type: none"> • “Organic Horticulture”-Junior undergraduate class hosted Mark Arena, Vistaa Plus guest lecturer and Senior State-wide Extension agent from Clemson University Agricultural Cooperative Extension Service who spoke about organic horticulture and organic farming in general, challenges currently faced by this field of agriculture and development trends. He also introduced participants to the Clemson University Organic Farm. 	
4.1.2 Conduct Career Development Sessions	<ul style="list-style-type: none"> • On April 20-22 at the 16th “Education and Career Expo” at Yerevan Expo Center’s “Mergelyan Institute” • ICARE presented the ATC MAB program along with the ANAU educational programs • InnovATE/Armenia project was featured in a separate pavilion at the Expo 	<p>Annex G– Certificate Education & Career Expo</p> <p>Annex H– Photos from Education & Career Expo</p>
4.1.3 Develop and test Confidence Survey for use to poll female ATC graduates	<ul style="list-style-type: none"> • MAB and undergraduate 2016 graduating classes exit survey completed and analyzed (see Annex). 	Annex I: Student Exit Survey
4.1.4 Establish new paid agribusiness internships opportunities	<ul style="list-style-type: none"> • Paid internship opportunities : <ul style="list-style-type: none"> - Shirakamut LLC - Urban Logistics Services - CARD - Viva Cell MTS - Gourmet Dourme - SIS Natural LLC - Hyelandz LLC 	
4.1.5 Supply and Demand for ICARE/ATC graduates in Armenia and the region	<ul style="list-style-type: none"> • Study will be addressed by VT experts in Year 3. 	
4.2 Explore Options for Double Degree Programs		
4.2.1 Assess possibilities for double degree program and accreditation	<ul style="list-style-type: none"> • Preliminary discussions with VT and PSU with recommendations during Vardan’s and Rector’s visit in September, 2016. 	
4.3. Establish ICARE/ATC Curriculum Advisory Committee (note change in committee needed)		
4.3.1 Present proposal for Curriculum Advisory Committee to ICARE Board	<ul style="list-style-type: none"> • Work in progress-the need for this committee has been superseded by the need for an ICARE Board sponsored fund raising committee. Proposal is currently under development. 	

4.4. Add Short Courses to ICARE/ATC Study Program		
4.4.1 Develop short courses based on Course Expansion Plan	<ul style="list-style-type: none"> Discussion is going on with International Finance Corporation regarding cooperation with ICARE to design and implement short courses on Greenhouse Operations and Management. 	
4.4.2 Increase hours of training in private sector productive capacity (through external funding)	<p>ICARE organized the following short courses:</p> <ul style="list-style-type: none"> <i>Application of Econometric Models Using STATA for Addressing Economic Questions</i> training course was conducted by ATC MAB instructor Rafael Bakhtavoryan, PhD, Texas A&M University on June 2-3. The purpose of this training is to teach participants the basics of STATA and get exposed to addressing economic questions (i.e., how much to produce, demand and supply functions and equilibrium price, estimation and empirical use of elasticities, basic forecasting, etc.) by estimating econometric models using the STATA software package. Total of 29 participants attended the training with gender distribution of 19 Female and 10 Male participants. A total of 67 applicants applied for the training. 	<p>Annex J- Agenda: Application of Econometric Models Using STATA for Addressing Economic Questions</p> <p>Annex K- List of Participants - Application of Econometric Models Using STATA for Addressing Economic Questions</p>
4.4.3 Survey private sector firms to determine level of Improved Management Practices	<ul style="list-style-type: none"> Activity to be done in August-Sept, 2016. 	
4.5. Leverage Short-Term Training Activities into Courses for Continuing Education		
4.5.1 Conduct short-term training on agriculture sector productivity or food safety conducted for agribusiness	<ul style="list-style-type: none"> A study was conducted by Ray Shaffer, Farmer to Farmer project volunteer to examine the current situation on phylloxera existence in Armenian wine regions. The assignment was to introduce phylloxera biology to ANAU/EVN students, introduce the concept of a rootstock mother block, introduce types of rootstocks that might be suitable to Armenian vineyards, and practices of phylloxera detection and control, as well as visit some vineyards and provide information and advice to growers. 46 persons (29 male and 17 female) were trained and 50 persons (28 male and 22 female) were directly assisted and received hands-on technical assistance, training or advice from the volunteer. Participants were ANAU students, lecturers, professors and winemakers. The list of participants is included in the attached report. 	Annex L- Report: Grape Cultivation /Phylloxera Management

4.5.2 Create Joint Certificate Program	<ul style="list-style-type: none"> Food Safety Systems Management (FSSM) Certificate course is being developed with leadership of Penn State and Virginia Tech. This will be offered for four weeks in beta test mode during January, 2017. 	
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Annex A: Trip report to USA, Zaruhi Davtyan, May 2016



Office of International Research Education and Development

Virginia Tech

526 Price's Fork Road (0378)

Blacksburg, VA 24061

Phone: (540) 231-1875

innovateprogram@vt.edu

<http://www.oired.vt.edu/innovate/>



Trip Report: PA and VA, US

Dates: 15-26 May 2016

Traveler(s): Ms. Zaruhi Davtyan

Institution(s): the Center for Agribusiness and Rural Development foundation

Purpose:

Participate in a tour at Pennsylvania State University (PSU) and Virginia Tech (VT), US to study the Food Science curriculum and short courses offered at both universities, as well as to learn various teaching methods, with a purpose to develop a Food Safety System Management (FSSM) curriculum for further teaching at Agribusiness Teaching Center (ATC) of the Armenian National Agrarian University (ANAU) in Armenia.

Site(s) Visited:

15 – 21 May 2016

Department of Food Science, PSU, College Station, PA

22 – 26 May 2016

Food Science and Technology Department, Virginia Tech, Blacksburg, VA.

The visit included a trip with FST faculty to the following sites on 24-25 May:

- Cherrystone Aqua Farms
- Pacific Tomatoes
- VA East Shore Agricultural and Research Extension Centers (ESAREC)
- VA Seafood AREC
- Graham and Rollins Crab processing
- Brewery

Annex A: Trip report to USA, Zaruhi Davtyan, May 2016

Description of Activities:

Department of Food Science, PSU, College Station, PA

16 May, Monday

- Assistant Director of Food Safety & Quality Programs Dr. Catherine Cutter organized **an orientation tour** through the Department of Food Science. The tour included Food Microbiology shortcourse training sites, laboratories, introductions to faculty members, and the PSU Creamery.
- In-brief with Dr. Cutter regarding current status and future plans for development of **FSSM curriculum for ATC**. In addition, the content of the current PSU short courses, such as Food Science Certificate Program were discuss as topics for possible inclusion in the FSSM curriculum. The topics include Introduction to Food Science, Sanitation, Food Microbiology, HACCP, and Food Defense.

17-19 May, Tuesday-Thursday

- Attended **Food Microbiology Shortcourse**. This 3-day training was designed for individuals involved in food microbiology testing, quality control, quality assurance, sanitation, and food production who need to increase their knowledge and skills in basic and applied food microbiology and food safety. The workshop effectively combined classroom and laboratory sessions, included a mixture of theory, demonstrations, and practical sessions on the fundamentals of food microbiology and food safety. It featured lectures from faculty of PSU and other US universities, as well as foreign professionals. In addition, Diagnostic companies were invited to demonstrate modern microbiological testing methods.
- Observed recording of the workshop (mostly classroom sessions), which was done with a purpose **to develop an online course** for ATC students.

20 May, Friday

- Meetings with **Mary Seaton from the College Relations Office** to discuss requirements for organization of PSU certificate courses. These courses are going to be adopted for further teaching at ATC, and PSU & VT certificates will be issued. Therefore, Ms. Seaton explained to what extent the modification of materials is acceptable for PSU. The process for issuing the certificates was discussed as well.
- Meeting with **Director of International Programs Deanna Behring** to discuss Innovate Project in Armenia and get acquainted with International Programs offered by the PSU College of Agricultural Sciences. The College has developed partnerships with agricultural, educational and research institutions around the world for joint research, faculty and student exchanges, and other collaborative projects. Their work via the Central and Eastern European Program, in the last few decades has been instrumental as countries in that region looked to agriculture and rural development as key to democracy building and the transition process to market economies.
- Meeting with **Dr. Robert Roberts, Professor and Head of the Department of Food Science**. This was an introductory meeting to present the purpose and the achievements

Annex A: Trip report to USA, Zaruhi Davtyan, May 2016

of the current visit, as well as to discuss the upcoming project activities to be implemented in Armenia.

- Skype call with **graduate student Dr. Robson Machado**. Discussed the current status and future plans for development of **FSSM curriculum for ATC**. In addition, negotiated possible involvement of Dr. Machado in the Innovate project in Armenia.

Food Science and Technology Department, Virginia Tech, Blacksburg, VA.

23 May, Monday

- Department Head Dr. Joseph Marcy organized **an orientation tour** through the Department. Particularly, a visit was paid to the in the newly constructed Human and Agriculture Biosciences Building 1 (HABB1). HABB1 has 93,500 square-feet of pilot plants, research laboratory and support facilities focused on a wide range of microbiological and biochemical research including food safety, food packaging and processing, flavor chemistry, and sensory analysis. New research laboratories occupy HABB1's top floor, with shared equipment and laboratory support spaces consolidated in the core of the building. The second floor also contains a Sensory/Flavor Testing suite incorporating individualized taste panels booths, a preparation kitchen, and a focus group room. During the tour contacts were established with wide range of FST faculty and staff.
- Meeting with **Dr. Joseph Marcy to discuss the topics to be taught by VT, as part of the FSSM curriculum for ATC**. Particularly, it was discussed to include the mandatory chapters of Better Process Control School (BPSC) that is based on Canned Foods: Principles of the Thermal Process Control, Acidification and Container closure Evaluation textbook. It was agreed not to include voluntary chapters regarding the types of retorts and container closures not commonly used in Armenia.
- Meetings with **Dr. Van Crowder, Executive Director** and **Dr. Larry Vaughan, Director for Program Development, Office of International Research, Education and Development (OIRE)**. The purpose and the achievements of the current visit were presented, as well as the upcoming project activities in Armenia were discussed. In addition, Innovate Project in Armenia and other with International Programs offered by VT were discussed.
- **In-brief meeting with OIRE faculty and staff**. During this 2-hour brief Ms. Zaruhi Davtyan presented her background, the Company she is representing, her involvement in the Innovate project, and answered to the questions from the audience.

24-25 May, Tuesday-Wednesday

A field trip with FST faculty to the following sites:

- **East Shore Agricultural and Research Extension Centers (ESAREC)**. The Center includes an office complex, laboratories, equipment buildings, garages, a greenhouse, graduate student housing, a large freshwater pond, and woodland areas. It conducts state-of-the-art applied research that is relevant to local large and small-scale farming operations.

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- **Visited Cherrystone Aqua Farms.** Observed production of Eastern Oysters and Hard Clams that were carefully handled, immediately refrigerated after packing, and shipped fresh nationwide.
- **Pacific Tomatoes:** learned about the company, observed tomato growing, Q&A with the site manager regarding tomato growing and harvesting methods.
- **VA Seafood AREC:** Core research and extension programs at the Virginia Seafood AREC focus on seafood safety, seafood quality of wild caught and cultured animals and products, business and marketing support for the commercial and aquaculture industries, engineering, thermal processing, intensive saltwater recirculating aquaculture, and education/ outreach for industry and consumers. The Virginia Seafood AREC also has a strong international program in food safety, food quality, Good Aquaculture Practices (GAQPs), intensive recirculating aquaculture (RAS) larval production of marine species, RAS design, implementation, and development.
- **Graham and Rollins Crab processing** is a blue crabmeat processing plant, in family operation since 1942. Product sold to several large grocery chains as well as several Sysco Foods locations. Started producing value-added products 5 years ago gradually increasing. Importers of blue crab from Mexico and Colombia, South America. Full line of fresh, frozen and pasteurized products.
- **Participated in a tour through a newly built brewery.**

Suggestions and Recommendations:

- Continue working with PSU and VT faculty and staff involved in the project to develop FSSM curriculum for ATC.
- As it has been agreed with PSU and VT, it is suggested to include the following topics to be taught by: Introduction to Food Science, Sanitation, Food Microbiology, HACCP, Food Defense, as well as mandatory chapters of BPCS applicable for Armenia. In addition, it is recommended to include the following topics to be taught by local specialists: food safety standards, certification and accreditation, introduction to ISO22000 standards, as well as local and international food safety laws and regulations.
- While developing the FSSM curriculum, pay special attention for effective combination of classroom, online, and practical sessions (lab exercises, field trips to food processing sites).
- Initiate organization of the logistic support for the first training session in January 2017.
- If necessary, CARD can assist PSU and VT to procure lab equipment and supplies to be used during the laboratory practical sessions.
- One of the major outcomes of the visit are the links established with university faculty and staff that will facilitate implementation of this and other educational and research projects.

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List of Contacts Made:

Last Name	First Name	Title/Organization	Contact Info (address, phone, email)
Cutter	Catherine	Assistant Director of Food Safety & Quality Programs, Food Safety Extension Specialist - Muscle Foods, Chair of the Food Safety Impact Group, PSU	433 Rodney A. Erickson Food Science Building University Park, PA 16802 Email: cnc3@psu.edu Work Phone: 814-865-8862 Fax: 814-863-6132
Doores	Stephanie	Associate Professor of Food Science, PSU	432 Rodney A. Erickson Food Science Building University Park, PA 16802 Email: sxd11@psu.edu Work Phone: 814-863-2956
Dudley	Edward	Associate Professor of Food Science, PSU	427 Rodney A. Erickson Food Science Building University Park, PA 16802 Email: egd100@psu.edu Work Phone: 814-867-0439
Gourama	Hassan	Associate Professor of Food Science, Division of Science, Berks College, Department of Food Science, University Park, PSU, Berks College, Division of Science	201E Luerksen Building Tulpehocken Road, P.O. Box 7009 Reading, PA 19610-6009 Email: hxg7@psu.edu Work Phone: 610-396-6121
Lomonaco	Sara	Adjunct Professor of Food Science, Assistant Professor of Food Safety Department of Veterinary Sciences University of Torino, Italy	Via Leonardo da Vinci 44, Grugliasco, TO 10095, Italy Work Phone: +390116709213 Email: sara.lomonaco@unito.it
Roberts	Robert	Professor and Head of Food Science, PSU	206 Rodney A. Erickson Food Science Building University Park, PA 16802 Email: Bob.Roberts@psu.edu

Annex A: Trip report to USA, Zaruhi Davtyan, May 2016

			Work Phone: 814-863-2959
Bucknavage	Martin	Senior Food Safety Extension Associate, PSU	438 Rodney A. Erickson Food Science Building University Park, PA 16802 Email: mwb124@psu.edu Work Phone: 814-867-1839
Machado	Robson	Graduate student, PSU	Email: ram471@psu.edu
Rivera	Minerva	Graduate student, PSU	Email: mxr444@psu.edu
Marshall	Douglas	Chief Scientific Officer, Eurofins Microbiological laboratories, Inc.	2000 Mackenzie Ct, Fort Collins, CO 80528 Phone: 1-970-217-6854 Email: DouglasMarshall@eurofinsUS.com
Miller	Arthur	Principle Scientist, Center for Chemical Regulation and Food Safety Exponent, Inc. Engineering and Scientific Consulting	320 Gobbard, Suite 200, Irvine, CA 92618 Phone: 949-242-6009 Email: amiller@exponent.com
Siragusa	Gregory	Senior Principal Scientist, Eurofins Microbiological laboratories, Inc.	2345 South 170 th Street, New Berlin, WI 53151 Phone: 1-262-389-4098 Email: gregorysiragusa@eurofinsus.com
Behring	Deanna	Director of International Programs, College of Ag Sciences, PSU	106 Agricultural Administration Building, University Park, PA 16802 Tel: 814-863-0249 Fax: 814-865-3055 Email: dmb37@psu.edu
Seaton	Mary	Assistant Director, College Relations Office, PSU	Email: mbs13@psu.edu Work Phone: 814-863-5846
Marcy	Joseph	Department Head, Food Science and Technology Department, Virginia	22A Food Science and Technology Building (0418) Blacksburg, VA 24061 (540) 231-7850

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		Polytechnic Institute and State University	(540) 231-9293 (Fax) jmarcy@vt.edu
Hudson	Denise	Financial & Program Coordinator, innovATE; International Res Edu & Dev, VT	540-231-8409 540-231-6338 Email: dchudson@vt.edu
Vaughan	Larry	Director of Program Development, OIRED, VT	526 Prices Fork Rd Blacksburg, VA 24061 540-231-2762 Email: larryjv@vt.edu
Williams	Robert	Associate Professor, Extension Food Microbiology, Food Science and Technology, HABB1, VT	1230 Washington Street SW, Blacksburg, VA 24061 540-231-4106 Email: rowilli3@vt.edu
Jahncke	Michael	Professor/ AEREC Director, Virginia Seafood AREC, VT	102 S. King Street, Hampton, VA 23669 757-727-4867 Email: mjahncke@vt.edu
Eifert	Joell	Director, Virginia Tech Food Innovation Program, Food Science and Technology (0924), Department of Food Science and Technology, VT	Blacksburg, VA 24061 540-231-2483 Email: joell.eifert@vt.edu

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Appendix 1: Visit Agenda

Sunday May 15

Arrive in State College, PA

Monday May 16

Rest at hotel

Tuesday May 17-Thursday May 19

Food Microbiology Shortcourse (agenda below)

Tuesday, May 17, 2016

7:00 AM - 8:00 AM

Registration/Check-In

Keeney Commons, 2nd Floor, Erickson Food Science Building

8:00 AM - 8:15 AM

Welcome and Introductions

Dr. Hassan Gourama, Program Coordinator, Associate Professor, Food Science, Penn State Outreach Room, 252 Erickson Food Science Building

8:15 AM - 9:00 AM

Introduction to Microbiology

Dr. Hassan Gourama

9:00 AM - 9:45 AM

Spoilage and Indicator Microorganisms

Mr. Martin Bucknavage, Food Safety Specialist, Penn State

9:45 AM - 10:00 AM

Break

10:00 AM - 11:00 AM

Methods for Sampling Food Products

Dr. Stephanie Doores, Associate Professor, Food Science, Penn State

11:00 AM - 12:00 PM

Methods for Bacterial Dilution and Enumeration

Dr. Catherine Cutter, Professor, Food Science, Penn State

12:00 PM - 12:45 PM

Lunch

Provided in Keeney Commons

12:45 PM - 1:30 PM

Introduction to Mold and Mycotoxins

Dr. Hassan Gourama

1:30 PM - 5:00 PM

Laboratory Sessions (See Lab Schedule)

Standard Plate Count/Pour Plates/Petrifilm/Spiral Plating
Staining and Microscopy
Aseptic Techniques/Sample Preparation and Enrichments
Mold Identification

5:00 PM - 7:00 PM

Welcome Reception

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Wednesday, May 18, 2016

- 8:00 AM - 8:45 AM **Parasites and Viruses**
Mr. Martin Bucknavage
- 8:45 AM - 9:30 AM **Immunologically Based Methods for Pathogen Detection**
Dr. Sara Lomonaco, Adjunct Faculty Member, Food Science, Penn State
- 9:30 AM - 10:15 AM **Listeria monocytogenes and Staphylococcus aureus**
Dr. Stephanie Doores
- 10:15 AM - 10:30 AM **Break**
- 10:30 AM - 11:15 AM **Salmonella and Campylobacter spp.**
Dr. Catherine Cutter
- 11:15 AM - 12:00 PM **Enterohemorrhagic Escherichia coli**
Dr. Catherine Cutter
- 12:00 PM - 12:45 PM **Lunch**
Provided in Keeney Commons
- 12:45 PM - 5:00 PM **Laboratory Sessions**

Thursday, May 19, 2016

- 8:00 AM - 8:45 AM **DNA Based Methods for Pathogen Detection**
Dr. Edward Dudley, Associate Professor, Food Science, Penn State
- 8:45 AM - 9:45 AM **Advanced Molecular Methods for Pathogen Detection**
Dr. Sara Lomonaco
- 9:45 AM - 10:00 AM **Break**
- 10:00 AM - 12:00 PM **Laboratory Session – Molecular Techniques**
Dr. Edward Dudley & Dr. Sara Lomonaco
- 12:00 PM - 12:45 PM **Lunch**
Provided in Keeney Commons
- 12:45 PM - 1:15 PM **Review of Lab Session**
Dr. Edward Dudley & Dr. Sara Lomonaco
- 1:15 PM - 2:00 PM **Setting Up a Microbiology Laboratory**
Mr. Martin Bucknavage

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2:00 PM - 2:45 PM	Quality Systems in the Food Microbiology Laboratory <i>Dr. Douglas Marshall, Chief Scientific Officer, U.S Microbiology Division, Eurofins</i>
2:45 PM - 3:00 PM	Break
3:00 PM - 3:45 PM	How to Help Your Company Survive a Food-Borne Illness Outbreak <i>Dr. Arthur Miller, Exponent, Inc. - Health & Environmental</i>
4:00 PM	Use of microbiome information in your plant <i>Dr. Greg Siragusa, Eurofins</i>
5:00 PM	Awarding of Certificates & Course Wrap-up <i>Collection of Course Evaluations and Distribution of Certificates</i>
Friday May 20	
2:00 pm	Meet with Mary Seaton-Conferences and Shortcourse Office
2:30 pm	Meet with Deanna Behring-International Ag Office
3:00 pm	Meet with Dr. Bob Roberts-Food Science Dept Head
4:00 pm	Skype call with Dr. Robson Machado (post-doc)
Saturday May 21	
Sunday May 22	
Personal time (ex. meet with Walt McVey)	
Leave for VaTech with Cathy Cutter	
Arrive Blacksburg VA. Hotel reservation The Inn at Virginia Tech 901 Prices Fork Rd, Blacksburg, VA 24061 (540) 231-8000	
Monday May 23	
9:00-12:00	J. Marcy to transport to HAB1 and tour of facilities and meetings with FST faculty/staff.
12:00-1:00	Lunch with selected FST faculty
1:00-5:00	OIRED D. Hudson, J. Cricenti
5:00	Inn at Virginia Tech
5:30	Dinner J. Marcy, Denise Hudson, Johanna Cricenti
	Hotel Inn at Virginia Tech
Tuesday, May 24	
6:45 am	J Marcy. Pick up at Inn to FST building
7:00 am	Depart FST for Van trip with FST faculty to Eastern Shore AREC Host: Laura K Strawn, Eastern Shore AREC, 33446 Research Drive, Painter, VA 23420 Office: 757-414-0724 , ext. 12 Cell: 714-450-0629 Lstrawn@vt.edu

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- 2:00 pm Cherrystone Aqua Farms <http://www.littleneck.com/>
1588 Townfield Dr. Cheriton, VA 23316
- 3:30 pm Pacific Tomatoes (commercial tomato planting and tour)
- 5:00 pm Eastern Shore AREC Overview of AREC in classroom with Steve Rideout and AREC faculty, quick building/lab tour, and possible field tour on golf carts (weather dependent). Check out our AREC programs below:
<http://www.arec.vaes.vt.edu/eastern-shore/programs/index.html>
Also, our Eastern Shore AREC Facebook Page:
<https://www.facebook.com/ESAREC>
- 6:30 Dinner at Clam Shack
Hotel: Hampton Inn & Suites 4129 Lankford Highway P.O. Box 189,
Exmore, Virginia, 23350, USA TEL: +1-757-442-7722
Confirmation Number: 85958748

Wednesday, May 25

- 8:00 Leave ESAREC to travel to VA Seafood AREC to arrive 9:30 or 10 AM.
Host Dr. Mike Jahncke, Director Virginia Seafood Center 102 South King Street, Hampton, VA 757-727-4861. (1) A tour of Graham and Rollins Crab processing just down the alley from us. (walking distance).
- (2) Arrive back at VA Seafood Center and a tour of our AREC. Meet with faculty and staff at the Seafood Center with an informal overview of our programs and people. Have our groups mingle and talk about potential collaborations with coffee and doughnuts. (3) Lunch at Papa Ciccio's, Hampton. (4) visit to a newly opened brewery (5) Leave for Blacksburg at 3PM.
- Arrive Blacksburg approximately 8:00 pm
Hotel, Inn at Virginia Tech Confirmation #774680

Thursday, May 26 Depart

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Annex 2. Photos

Modern sensory evaluation rooms at VT



Pilot plant at Food Science and Technology Department, VT



Pilot plant and a research lab at Food Science and Technology Department, VT



Visiting Cherrystone Aqua Farms



Annex A: Trip report to USA, Zaruhi Davtyan, May 2016

Pacific Tomatoes



Graham and Rollins Crab processing





International Center for Agribusiness Research and Education



REPORT

On trip to the USA - California for establishing relationship with potential donors and supporters

Vardan Urutyan, PhD
ICARE Director

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Tel.: (+374 10) 52 28 39, ext. 21
www.icare.am

Yerevan, April 2016

Annex B: Trip Report to USA, Vardan Urutyan, April 2016

Background information

The long-term financial sustainability of ICARE/ATC depends on establishment of an endowment fund: a widely accepted method for educational institutions to assure continued financial support. The InnovATE Armenia project explores the possibilities and legal frameworks for establishing the ICARE endowment fund. The project also explores possibilities for increasing scholarship and other funding. The Armenian Diaspora is viewed as an important potential contributor for ICARE, therefore, active communication and relationships are needed with the Armenian community in the USA.

During the period of April 4 - 16, 2016 the ICARE Director visited California, USA to establish new relationships with potential donors and supporters. The trip was planned in the scope of InnovATE Armenia project *Activity 2: Increase the Capacity of ICARE/ATC to Increase Revenue and Decrease Costs*, in particular in line with sub activity *2.2 Establish Endowment Fund* and *2.3 Establish and Expand ATC Alumni Network*.

Goal of the visit

The main goal of the visit was to establish relationship with Diaspora organizations, family foundations and agribusinesses in California area having the objective of further developing these relationships into sustainable partnerships.

April 4 - 8, 2016

Glendale, Pasadena, Los-Angeles

Activities and Outcomes

My first meeting was at the Western Prelacy of the Armenian Apostolic Church of America. I met with **Archbishop Moushegh Mardirossian**, Prelate of Western United States. Archbishop promised to spread the word about the ICARE/ATC and help with contacts. He contacted Mr. Varoujan Der Simonian of the Armenian Technology Group (ATC), previously very active in agricultural development projects in Armenia, and arranged a meeting in Fresno with me.

Then I visited Armenia Artsakh Fund and met with Program Director **Mrs. Nouritza Abujamra**. The fund was restructured recently from United Armenia Fund into Armenia Artsakh Fund and they were mainly providing humanitarian aid to Artsakh. She promised to talk to Mr. Harout Sassounian, Chairman of the Board, who has a wide network in Diaspora. We will stay in touch with Mrs. Abujamra and follow-up on possible cooperation.

I visited AGBU center in Pasadena and met with School director **Mr. Krikor Satamian**. The center was heavily depending on AGBU headquarter in New York and currently faces own

Annex B: Trip Report to USA, Vardan Urutyan, April 2016

fundraising challenges. There were other people participating in the meeting: Yenovk Balikian, Sargis Ilanchian who were supporters of the school. They were impressed hearing about the success of ICARE/ATC and expressed willingness to spread the word and provide contacts in Fresno.

I visited George Ignatious Foundation in Los Angeles. The foundation was located at Phillips Law Partners office at 800 Wilshire, Los Angeles but the operations were managed via Walter Karabian's office who is the 2nd founder of the Foundation. I met with Mr. Karabian's assistant and provided ICARE materials. The Ignatious Foundation is providing scholarships for Armenian students. After the visit I revealed that the foundation is mainly providing scholarships for students studying law. However, the assistant said that there might be opportunities to launch other scholarship programs.

While in Glendale and Pasadena I met with ATC alumni who live in the area. Many of them completed either Master's or PhD degrees and were offered jobs in the States after completing their study programs. I met with Olga Kudoyan, Vahan Papyan, Armenak Markosyan and Anahit Sargsyan. They also promised to support in network development and spreading the success story of the ICARE/ATC.



April 11-15, 2016

Fresno area

Activities and Outcomes

It's worth mentioning that during the entire stay in Fresno I was accompanied by Dr. Angela Neilan, InnovATE Armenia Program Director, who was present during all my meetings providing valuable support.

My first meeting in Fresno was at the Fresno State University where we met with **Mr. Barlow Der Mugrdechian**, Director of the Center for Armenian Studies. Unfortunately **Mr. Bill Erysian**, Manager of International Projects at Jordan College of Agricultural Sciences and Technology, was on business travel and we couldn't see him. Bill is very well aware of ATC's

Annex B: Trip Report to USA, Vardan Urutyun, April 2016

success and had expressed willingness to support and provide contacts. He is also the one who is responsible for international MoUs at Fresno State University. We toured in campus with Barlow. He encouraged us to meet with local Armenian owned business and present the activities of ICARE. He said that he is also in regular search of resources to support the Center for Armenian Studies.

My second visit was to Victor Packing, a vertically integrated company producing conventional and organic raisins. It was a family owned, nearly 90 years old business owned by Sahatjian family. **Victor Sahatjian**, the President of the company was unfortunately not available during the visit but we were able to meet with his son, **Richard Sahatjian**, Executive Vice President. Richard was impressed hearing the activities of ICARE and the success story of ATC. We discussed the possibility of having him as guest speaker via our videoconferencing facility as well as having internship opportunities in Victor Packing for ATC students. He expressed willingness to further explore the possibility and stay in touch.



Then we visited Avanti Nut Co Inc. located in Stockton. The CEO and President is **Mr. Pete Katzakian**. Avanti Nut Company is a family owned walnut processor. We toured the company facilities and discussed about different partnering opportunities. We will stay in touch and further explore the partnership possibilities.

Angela and I visited the Agrian Inc. and met with the CEO **Mr. Nishan Majarian** and President **Mr. Richard Machado**. The linkage came from the fact that Agrian has an office in Yerevan where 4 employees out of 23 are ATC graduates. Nishan Majarian was nicely surprised hearing that Agrian employs ATC graduates and said that he is very satisfied with the skill-set of the ATC graduates. Agrian offers high tech solutions for agribusiness and farming sector. It's a rapidly growing company and the company leadership plans to open more offices other than Yerevan office. They also plan to enlarge the operations in Yerevan and employ more people. Some (if not all) of the Agrian solution products can be used in Armenia (e.g. Agrian Advisor, Agrian Imagery). Hearing that ICARE is planning to establish a GIS Lab, Nishan was very much interested to cooperate in the scope of that initiative.



Annex B: Trip Report to USA, Vardan Urutyan, April 2016

He generously offered his support in capacity building and development of ICARE GIS Lab. I explained that there is an untapped potential in the field of precision agriculture in Armenia and having experts trained in latest GIS technology ICARE can further develop its research capacity and participate in EU or other platforms supporting Precision Agriculture initiatives. Nishan also expressed his readiness to organize on-site training and internship opportunities for ICARE staff at Agrian's Fresno office. Nishan Majarian soon will be travelling to Armenia and promised to visit ICARE and learn more about our activities on-site.

He was very kind to offer his help in connecting us with other businesses owned by Armenian families. Mr. Machado quickly arranged a visit with Fowler Packing, one of the largest packing operations in the area and Circle K. Ranch which are Armenian Family owned businesses. Fowler Packing was very impressive and inspiring. It was established by Parnagian brothers and grew into a large vertically integrated production, packing and logistics company. They produce and pack peaches, plums, nectarines, grapes, apricots, cherries and mandarins (especially they partially owned Halos). **Dennis Parnagian**, the President, kindly agreed to meet with me and Angela on a short notice and we had a very interesting visit. Mr. Parnagian is planning a visit to Armenia and we invited him to visit our school and learn more about our success.



Circle K Ranch is a family owned business. We met with **Mel Kazarian** and his son **Charles Kazarian** and had a nice tour in their peach orchards. We presented our program and activities to Mel and Charles and left brochures and ICARE annual report with them for further reading. We agreed to stay in touch and further explore opportunities for cooperation. Mel Kazarian visited Armenia last year and promised to visit ICARE when he travels to Armenia again.

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The visit of Simonian Farms was very interesting. We didn't arrange a meeting in advance. While driving we saw the Simonian Farms sign on the building and decided to enter. We were lucky to meet the owner, **Mr. Dennis Simonian**. We toured the area, visited the store and saw the largest collection of old tractors in the USA. The farm also had a museum. We read that President Bill Clinton visited Simonian Farms in 1995. Dennis has not been to Armenia before and we invited him to visit us. We also left the package of ICARE brochures and reports with him.

On the way we also visited Agajanian Vineyards store. The owner was not there but we left ICARE information with the secretary who promised to give to **Mr. Gary Agajanian**, the owner. Unfortunately so far we didn't get any feedback from them. In the future we will try to visit them again as we think that there might be cooperation possibilities in the scope of our EVN Wine Academy activities.

Our next meeting was with **Mr. Varoujan Der Simonian**. He was very active in Armenian Development initiative. In particular he is one of the initiators of the Armenian Technology Group (ATG) supporting Armenian farmers with new wheat varieties, modern farming practices, extension support. ATG office in Armenia became ATG Foundation later and continues its activities at a smaller scale. We are actively cooperating with ATG Foundation. Varoujan was nicely surprised hearing that ATC became a well-known research and education institution from a small education project. He promised to spread the word about the success of ATC and try to find potential supporters.



Annex B: Trip Report to USA, Vardan Urutyan, April 2016

Angel and I visited also National Raisin Company owned by Bedrossian family. **Bryan Bedrossian** kindly agreed to meet with us and talk about the possible cooperation. He managed the Bedrossian Farms. He is also active in social and charitable activities in Armenia and Artsakh. Bryan is travelling to Armenia quite often and he promised to visit us in February 2017.

We conducted several meeting at the Fresno State. First we visited Enology and Viticulture department and met with new interim department chair **Dr. Eric Person**, winemaker **Matt Brain** and program coordinator **Cynthia Wood**. We explored possibilities for cooperation and decided to start with study abroad type programs. We also visited Agricultural Business Department and met with **Dr. Annete Levi**, professor and chair. Annete was interested in our programs and we decided to work on a memorandum of understanding and later discuss the possibility of having joint educational programs. Fresno State has similar programs in China and we are planning to study the approach and model of cooperation (e.g. double degree program) Fresno State is implementing with Chinese universities.



Acknowledgements

My deep gratitude goes to the USAID and InnovATE project as my trip wouldn't be possible without the support of USAID. I am very thankful to Angela Neilan, InnovATE Armenia Project Director, who accompanied me in Fresno, provided kind support and encouragement during my whole stay.



International Center for Agribusiness Research and Education



REPORT

On trip to the USA – Boston and New York Cities for strengthening the relationships with existing donors and supporters and establishing new relationships

Vardan Urutyan, PhD
ICARE Director

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Yerevan
June 30, 2016

Annex C: Trip Report to USA, Vardan Urutyan, June 2016

Background information

The long-term financial sustainability of ICARE/ATC depends on establishment of an endowment fund: a widely accepted method for educational institutions to assure continued financial support. The InnovATE Armenia project explores the possibilities and legal frameworks for establishing the ICARE endowment fund. The project also explores possibilities for increasing scholarship and other funding. The Armenian Diaspora is viewed as an important potential contributor for ICARE, therefore, active communication and relationships are needed with the Armenian community in the USA.

During the period of June 5 - 16, 2016 the ICARE Director visited Boston and New York City to strengthen the existing relationships and establish new relationships with potential donors and supporters. The trip was planned in the scope of InnovATE Armenia project *Activity 2: Increase the Capacity of ICARE/ATC to Increase Revenue and Decrease Costs*, in particular in line with sub activity 2.2 *Establish Endowment Fund* and 2.3 *Establish and Expand ATC Alumni Network*.

Goal of the visit

The main goal of the visit was to conduct 2 networking events in the USA aimed at strengthening the existing relationship with potential supporters and to establish new relationship with Diaspora organizations, family foundations and agribusinesses in the Boston and NYC area.

June 6-8, 2016

Pembroke, Blacksburg, VA

Activities and Outcomes

During the first days of my visit I was able to participate in the InnovATE workshop “AET Institutional Transformation: A Project Design Review Workshop” at the Mountain Lake Lodge in Pembroke, Virginia. I attended round table discussions, participated in the poster session and presented the ICARE InnovATE Armenia poster.

Then I had a meeting with Dr. Van Crowder, Executive Director, Office of International Research, Education and Development (OIRE) and Dr. Walter Witschey, fundraising expert. We discussed the priorities and actions to be concentrated on during InnovATE Armenia year 3 activities. It was agreed to further activate the fundraising efforts and find a consultant/facilitator who can manage ICARE’s fundraising efforts in the USA. Walter Witschey provided additional insights about communication strategies with potential donors and supporters. I also met with Mr. Adam Short, Associate Director for Corporate and Foundation Relations University

Annex C: Trip Report to USA, Vardan Urutyan, June 2016

Advancement. He provided useful insights on grant-making database of the Armenian foundations.

I visited the new Food Science and Technology complex at Virginia Tech accompanying with Dr. Joe Marcy. We reviewed the modules of the Food Safety Systems Management program that are under development by Penn State and VT. The new FSSM program will be launched in January 2017 as an additional certificate program at the Agribusiness Teaching Center.



June 9 -12, 2016

Boston, MA

Activities and Outcomes

The main goal of Boston visit was to organize a networking event with the Armenian Business Network (ABN – www.armenianbusinessnetwork.com). The agreement on organizing a networking event jointly with ABN was made during my last visit to Boston. The ABN Executive team members provided valuable assistance in the whole process. Without the kind efforts and assistance of Karina Demurchyan, Arlette Yegumians, Jack Antounian and George Haroutiounian the event wouldn't be possible.

About 100+ people attended the event. I made a presentation on Wine Making and Agribusiness Education in Armenia. The announcement of the event is available in Appendix. The outreach went beyond the list of participants. The event was featured in the Armenian Mirror – Spectator: <http://www.mirrorspectator.com/2016/06/16/armenian-wines-win-over-kgb-crowd-at-abn-event/>. The editor of The Armenian Mirror – Spectator, Mr. Aram Arkun was also attending the event. The full article is available in Appendix.

I met with ATC alumni Tatevik Zohrabyan who just graduated from MIT with MBA. We explored ways of cooperation with ATC and she agreed to actively participate in executive seminars and videoconference based training offered by ICARE. Soon she will conduct an executive seminar at ICARE on Social Media Management.

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June 13 -16, 2016

New York City

Activities and Outcomes

The New York City networking event (Luncheon presentation) was organized by Carnegie Corporation (see announcement in Appendix) on June 15. Ms. Deana Arsenian, the vice president of Carnegie Corporation was the local host providing a great assistance for organizing the networking event. Among the participants were Mr. Zohrab Mnatsakanyan the Armenian Ambassador to UN, Patrick Sarkissian from OneArmenia Nicole Vardanian from COAF, Rachel Najarian from IDeA Foundation, Irina Lazarian from Karagheusian Foundation, Tavit Najarian of Najarian Associates, Vahan Tanal, Mark Malkhasian, Yelena Nersesyan, Michael Ansour from March Global Advisors, Andre Berge from Fund for Armenian Relief, George Bournoutian from Iona College. Many of the participants were planning a trip to Armenia and I invited them to visit ICARE and learn more about our programs and activities. The event went very well. The participants were impressed with ICARE success story and expressed willingness to support ICARE fundraising efforts.

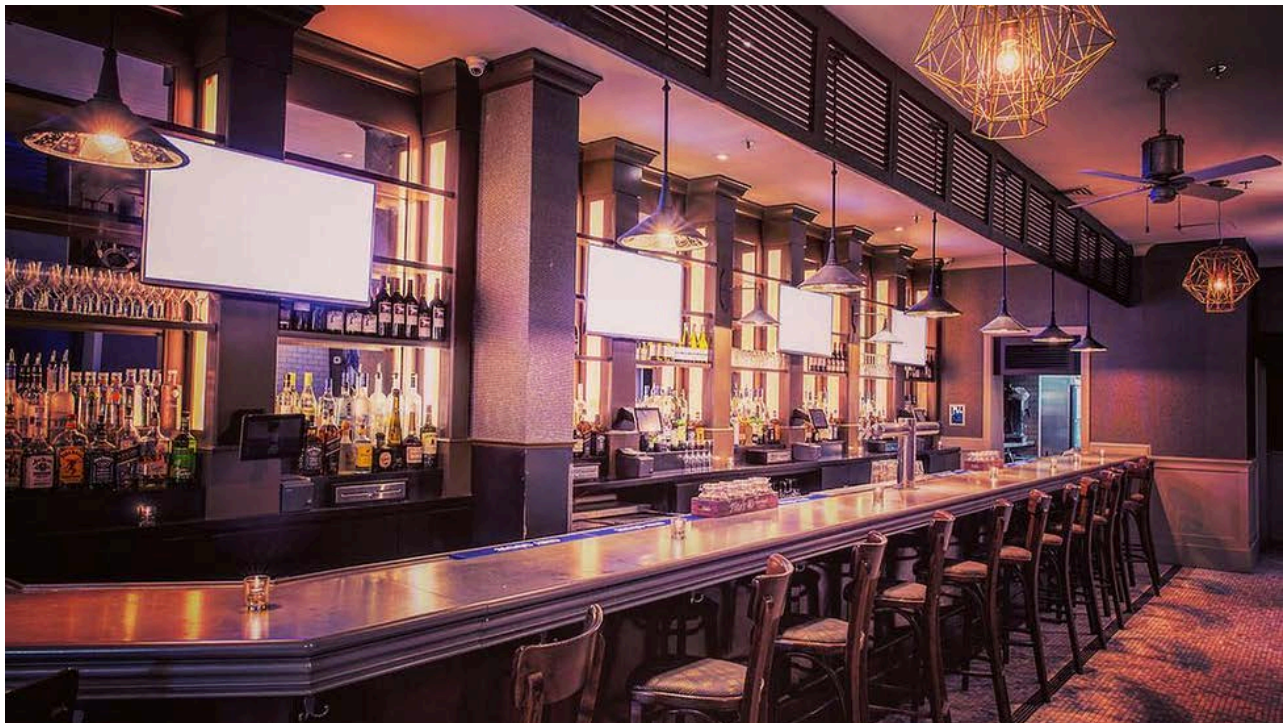
Dr. John Nichols, chairman of the ICARE Board of Trustees also participated in the event travelling all the way from College Station, Texas. The ICARE Development Office will continue following up with the new contacts made during both events in Boston and NYC.



Acknowledgements

My deep gratitude goes to Ms. Deana Arsenian, Ms. Karina Demurchian, Ms. Arlette Yegumians, Mr. Jack Antounian. Without their kind support and dedication the ICARE networking events in Boston and New York City wouldn't be possible.

Appendix 1. Announcement of the ABN Spring Networking Event.



ABN SPRING BUSINESS NETWORKING EVENT

featuring speaker Dr. Vardan Urutyan

June 9, 2016 @ 6pm @ Kingston Grille & Bar (KGB)
25 Kingston St, Boston 02111

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Please join us **Thursday, June 9, 2016 @ 6pm** at the new & hip KGB ([Kingston Grille & Bar](#)) in Boston for the ABN Spring Business Networking Event and Speaker Presentation with Dr. Vardan Urutyan on “Wine Making and Agribusiness Education in Armenia”.

In most recent years, Armenian wines have been competing on the world stage with some of the best wines and winemakers from around the world. In 2012 Bloomberg listed 2010 [Zorah Karasi Areni Noir](#) in their [Top 10 Wines](#) lists. “I was wowed by my first-ever taste of an Armenian wine, this stylish red made from Areni noir grapes and aged in traditional clay amphora.” said Elin McCoy/Bloomberg.

ABN is excited to feature **Dr. Vardan Urutyan**, Director of International Center for Agribusiness Research and Education ([ICARE](#)) and Co-Founder of **EVN-Wine Academy** in Armenia. Founded by Texas A&M, ICARE provides innovative education in agribusiness through best international knowledge, research and developments in the field. ICARE has been one of the catalysts of the growing agribusiness in Armenia, specifically the wine industry and wine making, through education of food and agribusiness industry professionals. The employment rate of the graduates of ICARE programs within the first year of graduation is 92%. Dr. Urutyan will share his insights on ICARE, Agribusiness education, and the wine industry in Armenia. You will also have the opportunity to taste a few of the exclusive wines from Armenia.

Watch these two short videos on [EVN-Wine Academy](#) @ <https://goo.gl/eq2KOC> and [ICARE](#) @ <https://goo.gl/81xOPr>. You can learn more about the programs at www.icare.am.

As always this event is free of charge with complimentary apps provided by KGB and a cash bar. Please feel free to bring your business cards and collateral for display.

We are grateful to Mr. Dimitri Petrosian, Mr. Shahrokh Reza and the entire KGB Team for sponsoring ABN's Spring Networking Event!

We look forward to seeing you all on June 9th! Please RSVP to ArmenianBusinessNetwork@gmail.com by June 6th.

SCHEDULE:

6pm – Registration

7pm – Dr. Vardan Urutyan's presentation “Wine Making and Agribusiness Education in Armenia”
Networking immediately after presentation.

VENUE: KGB (Kingston Grille & Bar) @ 25 Kingston St, Boston, MA 02111

Kingston Grille & Bar serves bistro cuisine in an urban, old-world atmosphere. Guests can lounge at the bar and front café area, or relax in the dining room. Top notch service and a mouth-watering menu set the stage for a memorable Boston dining experience. Please find more information on the venue at www.KGBBoston.com

If you are not currently an ABN Member you can join at the link below, however, membership is not a requirement for attending the June 9th event. Please feel free to extend this invitation to your Armenian contacts in the New England area, as you deem appropriate.

To join ABN visit <http://www.ArmenianBusinessNetwork.com> and request to join on the ABN homepage, through the LinkedIn and Facebook icons.

Appendix 2. The Armenian Mirror – Spectator Article

THE ARMENIAN Mirror-Spectator

Armenian Wines Win over KGB Crowd at ABN Event

BOSTON, MASS. | JUNE 16, 2016 1:29 PM



Armenian Business Network's Karina Demurchyan introduces Dr. Vardan Urutyan



Tekeyan's Aram Arkun

Annex C: Trip Report to USA, Vardan Urutyan, June 2016

By Aram Arkun

Mirror-Spectator Staff

BOSTON — The Armenian Business Network (ABN) sponsored a networking event with a presentation by Dr. Vardan Urutyan on winemaking and agribusiness education in Armenia on June 9 at the Kingston Grille and Bar (KGB) in downtown Boston. The event also included presentations from two organizations fundraising for aid to Armenia and Artsakh – the Tekeyan Cultural Association of the US and Canada (TCA), and the Memory Dignity Justice Association. As many as 120 people were present.

Karina Demurchyan, a member of the ABN executive council, served as master of ceremonies in the lively, crowded environment. After briefly speaking about ABN, she introduced this writer, Aram Arkun, TCA executive director, who pointed out that Tekeyan's new program is small and transparent. It sends aid directly to victims of the recent fighting in Artsakh and Armenia, including wounded soldiers and the families of soldiers killed during the fighting, through its representative in Yerevan, and it obtains receipts. It will report on the distributions, which are now beginning. It does not charge any administrative costs, which the organization itself absorbs (see the TCA-Boston Facebook site or call 617 924-4455).

Manoog Kaprielian then spoke about the Memory Dignity Justice Association (MDJA), which strives to achieve the three goals embedded in its name concerning the violence against Armenians in Azerbaijan from 1988 to 1990. One of its members, Eduard Fandunyan, recently donated an ambulance and a bus for people with physical disabilities, to Artaskh. The Association is raising funds as well as collecting certain items necessary there such as medical supplies or clothing as donations. He said that MDJA will post details for donation drop-off arrangements and financial contributions on its Facebook page. Interested parties can also contact Garen Bagdasarian (garen1562@gmail.com, tel. 401 569-7305). The shipment is expected to be ready at the end of this June.

Representatives of the government of the Republic of Mountainous Karabagh as well as the association's local contacts will make the final delivery of the shipment. Donations and delivery will be fully transparent and reported.

Urutyan then made his presentation, accompanied by slides. He is the general director of the International Center for Agribusiness Research and Education (ICARE) in Yerevan, established by Texas A&M University in 2005 to run the Agribusiness Teaching Center (ATC) previously created in 2000 as part of the Armenian National Agrarian University (ANAU). ATC offers undergraduate and graduate programs, including the Master of Agribusiness program from ANAU, and a graduate certificate from Texas A&M University. In 2015, it had 127 students.

Urutyan's focus, however, was about wine as part of agribusiness in Armenia. It is one of the most important exports of the Republic of Armenia along with the rest of agribusiness.

About one-third of the population of Armenia is involved in agriculture and it produces 26 percent of the gross domestic product, according to Urutyan. Agriculture is important for national security as well as the economy, as it provides a livelihood for people in the villages near the borders of Armenia.

The wine sector has recently been growing well, especially exports. The discovery of the oldest winery of the world, 6,100 years old, in the Areni caves has stimulated world interest in Armenian wines. The number of wineries has increased so that today there are 35 in Armenia.

It is not only wine exportation that has increased. Wine consumption per capita has been rising in Armenia with the creation of new wine bars and restaurants serving wine. Consumption in Armenia per capita per year today is 8.8 liters, up from 1.4 in 2010, while imported wines are decreasing in quantity.

There are some 400 native varieties of grapes in Armenia but only 70 have been preserved, and of these, 12 are being cultivated. Urutyan brought several types of Armenian wines, both red and white, and offered them for tasting to the guests. They included Zorah, Karas, ArmAs, Vanardi and Zara. Urutyan was assisted by Arthur Grigoryan, the development director of ICARE.

They also brought the first wine made by three students from EVN, who happened to all be women. It took the students approximately 8 months to make the wine and about 6 months to do the necessary paperwork so that the wine would be ready by their June 1 graduation.

In the old days, Soviet winemakers did not use advanced technology. Back then, Armenia focused on cognac. ICARE created the EVN Wine Academy two years ago in cooperation with Semina Consulting. It offers an 18-month enology

Annex C: Trip Report to USA, Vardan Urutyan, June 2016

program taught in English with instructors from the German Geisenheim University. The first graduation took place this June, and the 14 graduates all already have been placed in jobs. One is Mariam Saghatelian, the founder and manager of the first specialized wine shop and bar in Yerevan, In Vino.

EVN has a Wine Laboratory which is the only educational wine laboratory in the Caucasus region. Contributions from the German Development Corporation (GIZ) and the Boston area couple Judith Saryan and Victor Zarougian made it possible.

Urutyan said that ICARE and ANAU could draw upon 15 years of general experience to make EVN Wine Academy successful. It all began in 2000 with ATC. The United States Department of Agriculture and Texas A&M helped make the organization more mature and in 2014 USAID and Virginia Tech began assisting it. Virginia Tech, Penn State and the University of Florida are helping add more educational programs. In 2015, Geisenheim University in Germany decided to support the wine academy. It is the top European wine research and education institute. EVN offers short courses and a professional certificate program in enology and wine business jointly with Geisenheim.

Many ICARE ATC graduates have become professors in US and other Western universities or have jobs in corporations. One, Armen Harutyunyan, is the deputy minister of agriculture today in Armenia. It has approximately 92 percent job placement of the 455 graduates of the ATC undergraduate and master's programs. It continues to collaborate with Texas A&M University, which gives certificates to its graduates. Their salaries are two to three times higher than the industry sector average.

With a student-centered environment, Urutyan stated that the curriculum is in the Western style, with highly qualified instructors and extracurricular activities, while the programs are industry-driven. Urutyan said, "We are very closely tied with the industry." Aside from economics and finance, leadership and other "soft" skills are stressed to build emotional intelligence. Students are given opportunities to meet with CEOs.

Boston area Armenians Judith Saryan and Victor Zarougian were present in the audience. Urutyan pointed them out and explained that in addition to the aforementioned wine laboratory, they supported the establishment of the largest solar panel system in Armenia at ICARE. This saved much money as well as helped the environment.

After the event, Zarougian said that he was so impressed by the work done by Urutyan and ATC that even without meeting the latter in person, after doing some research, he decided to help in the creation of the solar panel system. He was amazed that up until that time, 2011 or 2012, there was no such system in all of Armenia despite the advantage of having great sunlight to power it. Now, the technology has begun to proliferate.

Zarougian and his wife supported the EVN laboratory a year ago because they felt it would be a useful spur to the Armenian economy. Zarougian said, "This is one of the sectors that has a very, very bright future. It is a sustainable and self-dependent field." The soil and climate are favorable for growing grapes, and now better quality wines are being created, Zarougian said.

He added that in addition to the direct benefits for the Armenian economy through job creation, the creation of wine bars and other outlets for wine consumption might lead to a more attractive environment for tourism. Interestingly, there may also be domestic health and societal benefits. The increased domestic consumption of wine seems to be replacing vodka drinking to a certain extent.

Ralph Yirikian and Viva Cell helped establish a video conference facility for ICARE so that executives in the US and elsewhere can teach students in Armenia. Internally there is fundraising in Armenia to get a modernized computer lab.

Among its other projects, ICARE runs the Agribusiness Research Center, which gets funding from various private and governmental American and European agencies and organizations to conduct research and rural development projects.

To ensure its long-term success and viability, ICARE is building an endowment fund and soliciting support from the Armenian diaspora for this and a fund to sponsor student tuition (for more information, see www.icare.am).

Institutional Sustainability Campaign @ <https://www.ICARE.am/donate/index.php>

Dimitri Petrosian and Shahrokh Reza of Kingston Grille and Bar sponsored the ABN event, with the support of their staff, while Ara Sarkissian procured the Armenian wine provided for the tasting.

Appendix 3. Announcement of the Luncheon Presentation at the Carnegie Corporation



CORDIALLY INVITES YOU TO A LUNCHEON
WITH

VARDAN URUTYAN
DIRECTOR OF ICARE ARMENIA



Wednesday, June 15, 2016
12:30 – 2:00 p.m. Luncheon and Discussion

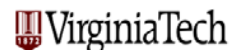
Carnegie Corporation of New York
437 Madison Avenue, 31st Floor
(Between 49th & 50th Streets)
New York, NY 10022

R.S.V.P. by June 3, 2016
to: nn@carnegie.org

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International Center for Agribusiness Research and Education (ICARE)
Foundation



REPORT

on trip to the United States, June 5-22, 2016

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Annex D: Trip Report to USA, Arthur Grigoryan, June 2016

Background information:

The goals of the InnovATE/Armenia project are: increase the capacity of ICARE in its activities related to institutional advancement including fundraising, empower ICARE to become a full partner in international research and development projects, assist ICARE in bringing the most innovative education and training for development of agriculture in Armenia, and engage local and international stakeholders interested in sustained development of agribusiness in Armenia.

Goal and objectives of the visit:

- Co-organize and conduct receptions in Boston and New York City
- Present the Institutional Sustainability campaign to prospective donors and those who may network the ICARE with prospective donors.
- Raise awareness about the Institutional Sustainability Campaign through individual meetings
- Establish new academic networks

June 5-9 (Boston and Watertown, MA)

Meeting with Archimandrite Superior Very Rev. Sahag Yemishian and visiting Watertown, MA. Watertown is known as a center for Armenian Diaspora at the East coast and it is often being compared as "Glendale of the East Coast". The visit included St. Stephen's Armenian Church, <http://www.soorpstepanos.org/>, and some Armenian shops and restaurants in Watertown. There is an Afeyan building of St. Stephen's Elementary School, right next to the church, built by a contribution from Noubar Afeyan, an entrepreneur and a philanthropist. Currently we are attempting to establish direct contacts with Mr. Afeyan. Another popular Armenian church in Watertown is St. James Armenian Church, <http://stjameswatertown.org/>. The churches in Armenian Diaspora, per se, have their own fundraising agenda and are not considered as a source of funding. However, most of the Armenians in the area attend the church events, which is a networking source if church events attended regularly.



A short informal presentation featuring the ICARE and the Institutional Sustainability Campaign was held in Watertown at [Seta's Cafe](#) with Very Rev. Sahag Yemishian and a few other local Armenians.

The June 5-9 period was also the time for last preparations for the June 10 reception with the Armenian Business Network.

June 10

Reception at KGB Grill co-organized by the Armenian Business Network in Boston (ICARE presentation, introducing the Institutional Sustainability campaign, and a wine tasting). The details of the event are presented in Dr. Vardan Urutyan's trip report.

June 11-15

Final preparations and co-organization of the ICARE presentation and a luncheon at Carnegie Corporation, NYC. Details of the presentation are presented in Dr. Vardan Urutyan's trip report.

Annex D: Trip Report to USA, Arthur Grigoryan, June 2016

June 16-22 (New York City and Ithaca, NY)

On June 16 I had a short trip to Ithaca for just a few hours to visit the Cornell University and meet staff of the Viticulture and Enology and other programs in the university. The meetings showed a possibility to establish a Study Abroad program at ICARE and invite students from the Cornell for a semester or semester+internship format. The visitors, will therefore, pay ICARE Study Abroad program costs at ICARE and will potentially generate influx of funds to the institution. It is expected to arrange the first group of 2-3 students arrive to ICARE in spring 2017 if all the preparation activities move on as planned.

A business lunch was organized with ATC alum Gnel Gabrielyan and a professor of astronomy at Cornell University and a philanthropist Prof. Yervand Terzian, <http://astro.cornell.edu/members/yervant-terzian.html>. An informal presentation of ICARE and introduction of the Institutional Sustainability campaign was made to Prof. Terzian who shared contacts of Mr. Garnik Nanaghulian, the President of Fund for Armenian Relief. An active follow-up will be made with Prof. Terzian following this trip as he is well-connected among Armenians at the East Coast.

On June 19 I visited the St. Vartan Cathedral - Armenian Apostolic Church in new York and took the pictures of their donor walls, as well as distributed business cards and ICARE brochures to the high level authorities at the church office.

Angela Neilan, InnovATE Program Director, visited New York City on June 19th to join the efforts of contacting some prospects and making "cold calls". During a lunch at Petrossian high-class restaurant, the ICARE package and business cards were passed for Mr. Alexander Petrossian, Director. The Petrossian family owns luxury black caviar restaurant business in Paris and NYC.

Attempts have been made to contact Steven A. Kandarian, CEO of the MetLife. It was eventually decided to FedEx the ICARE package to him.

Angela Neilan and myself also visited some wine stores in NYC and discussed the possibility of introducing Armenian wines in the US market.

List of Contacts Made:

Name	Title/Organization
Yervant Terzian	<i>Tisch Distinguished University Professor, Director of NASA NY Spacegrant, Cornell University</i>
Karen Papazian	Director of Development and Outreach, AGBU NYC office
Irina Lazarian	Managing Director, The Howard Karagheusian Commemorative Corporation, NYC
Yelena Nersesyan	Attorney, NYC
Vahan Tanal	President, Vahan Tanal Consulting, Inc, NYC
Jason Soghinyan	Deputy Director, Armenian Tree Project
Karina Demurchian	
Kenneth Martin	Senior Lecturer, Suffolk University
Arthur Harutyunyan	Freelancer, Boston, MA
John Mooradian	Wine Director, Harvest Restaurant, Boston
Gavin Sacks	Associate Professor, Cornell University
Alicia Orta-Ramirez	Director of Undergraduate Studies, Department of Food Science, Cornell University
Justing Vanden Heuvel	Associate Professor, Department of Horticulture, Cornell University
Martin Cherry	Undergraduate Program Coordinator, Department of Food Science, Cornell University
Dwayne Bershaw	Enology Lecturer, Department of Food Science, Cornell University
Fine Wines and Spirits store	NYC

Annex E: Abstract “Smart Approach to Efficient Water Resource Usage”

ABSTRACT

There are about 200 fisheries in the part of Armenia called Ararat Valley, where most of the agricultural production in Armenia takes place. These fisheries pump out groundwater resources to maintain their operations. In the last few years the groundwater supply has decreased considerably, since only very few fisheries have water re-circulation system installed (it requires a rather big investment for small household operated fisheries). This leads to big issues with soil salinization and results in lack of irrigation water for many communities. Of course the mentioned factors are crucial for the agricultural output in the Ararat Valley. A “smart” approach to efficient water resource usage in fish production in Armenia can be developed for representative fishery and replicated to others. This approach involves intertwining fishery operations with agricultural production. A very small investment is required for setting own greenhouse in the fishery territory or for construction of pipeline to sell the discharge water to the nearest community for irrigation purposes. Detailed description of the combined aquaculture aquaponics model on the example of the fish farm in the village of Hovtashat in Ararat Valley shows the feasibility of substantial reduction of used water with under 10 thousand Euros of initial investment. This easy approach solves big ecological issue and contributes to food security issues that are of a high importance in Armenia.

Annex F: Photos from International Consortium on Applied Bioeconomy Conference





Annex H: Photos from Education & Career Expo



Student Exit Survey



June 2016

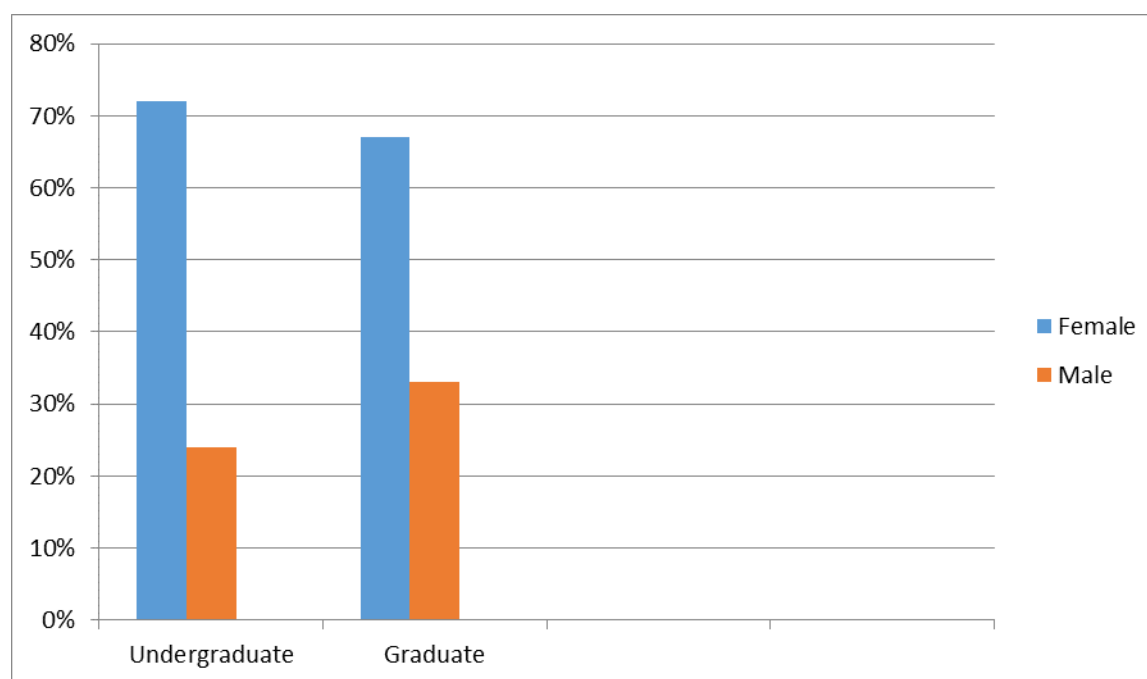
Annex I: Student Exit Survey Analysis

The **Agribusiness Teaching Center (ATC)** provides agribusiness education to achieve sustainable entrepreneurial activities in the food and agriculture sector in Armenia. For improving efficiency of our services Agribusiness Teaching Center implemented survey among undergraduate and graduate students. In total 34 students participated in the survey, from which 25 were undergraduate students and 9 were graduate.

General characteristics of ATC graduates of 2016

Figure 1 shows the distribution of graduates by gender.

Figure 1. Distribution of ATC graduates by gender



The analysis shows that over 60% of both graduate and undergraduate students were female. This tendency was observed at the center throughout the years of operation. The distribution by age demonstrates that the age of undergraduate students was within 20-23 (fairly small range), whereas the age range of graduate students fall within 22-32. The detailed information on the age can be found in the Table 1 below.

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Table 1 Age distribution of ATC graduates of 2016

<i>Age</i>		<i>Frequency</i>		<i>Percentage</i>	
<i>Undergraduate</i>	<i>Graduate</i>	<i>Undergraduate</i>	<i>Graduate</i>	<i>Undergraduate</i>	<i>Graduate</i>
20	22	3	2	12%	22%
21	23	16	1	64%	11%
22	24	5	2	20%	22%
23	25	1	1	4%	11%
	29		1		11%
	30		1		11%
	32		1		11%

During their undergraduate/graduate study 24% of undergraduate students worked regularly part time and another 36% had worked as an intern.

On question of immediate employment/education plans, 52% of undergraduate students indicated that they are unemployed and they are looking for employment. 24% of undergraduate students are currently employed but they are still looking for alternative employment. From graduate students 56% are currently employed but looking for alternative employment and 44% are currently employed and they don't consider alternative employment option. More than 50% of undergraduate and graduate students are willing to work in private for-profit companies one year after graduation. The preferred sector among graduate and undergraduate students was agribusiness and agribusiness related industries.

Study program evaluation

Students have been pleased to evaluate the undergraduate/graduate academic programs of Agribusiness Teaching Center. Undergraduate students provided the lowest rank to effectiveness of the classroom and computer lab facilities. 89% of students' surveyed strongly agreed that the courses covered were appropriate. Graduate students were neutral about efficiency of field trips and career advising options.

Annex I: Student Exit Survey Analysis

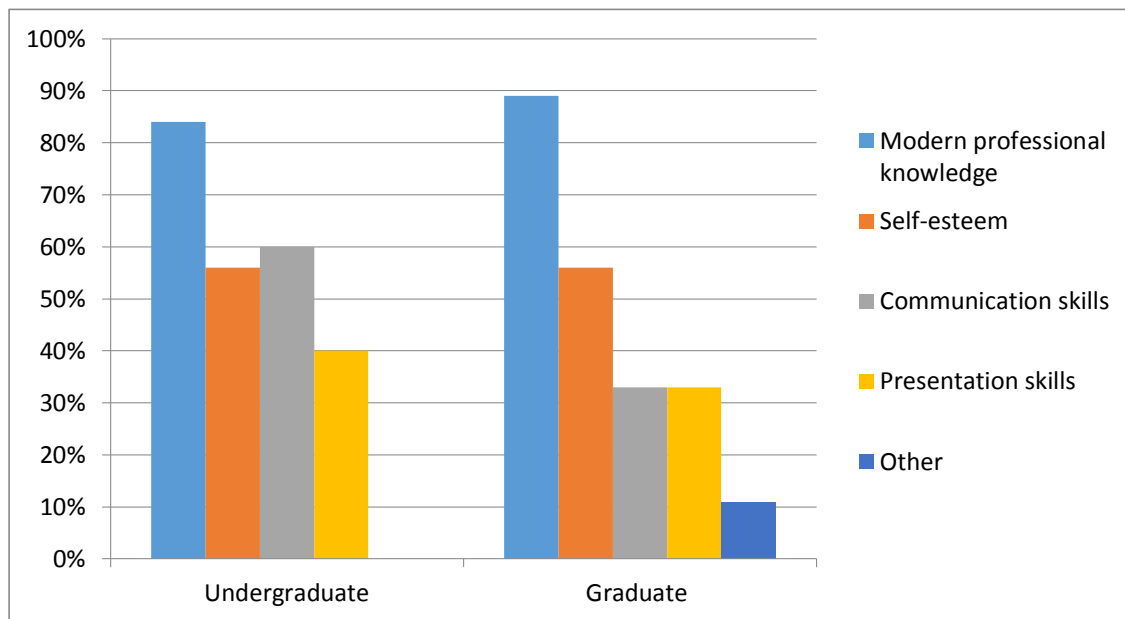
Questions concerning educational methods were rated excellent/good among undergraduate students. 84% of undergraduate respondents rated the lecturing/theoretical knowledge and presentations as excellent. 22% of surveyed graduates provided average rate to presentations as educational method and 33% provided average rate to teamwork as educational method. Other methods have been rated as excellent or good.

Students were also asked to rate their experience in undergraduate/graduate program. The results were impressive. 56% of undergraduate students rated their experience excellent and 44% rated good. 44% of graduate students rated their experience excellent, 56% rated it good. Next question was how much did their education at ATC contribute to their development in the following areas. 96% of students surveyed stated that education contributed greatly to their ability to function as part of a team. 89% of graduate students stated that education contributed greatly to their ability to critically analyze ideas and information.

When asked whether they think ATC program equipped them with skills and knowledge necessary to succeed in the job market, both undergraduate and graduate students give the highest rank to this question.

The answers on question what skills they obtained at ATC that provided them with advantage compared to other young people in their age group is shown in Figure 2. Figure clearly depicts that most of the students believe they have advantage in modern professional knowledge.

Figure 2. Skills that students obtained at ATC



Annex I: Student Exit Survey Analysis

The results obtained indicate that 100% of ATC graduate and undergraduate students feel confident or rather confident that they can successfully perform tasks and overcome challenges.

Students were asked to mention three things they liked the most about ATC. Most undergraduate students (68%) first mentioned atmosphere and culture, second teaching methodologies and third applied knowledge gained. Graduate students also first mentioned atmosphere and culture (78%), second teaching methodologies and third place was equally distributed between faculty and staff and applied knowledge gained. The three things that both graduate and undergraduate students didn't like the most were facilities, equipment and technologies.

The three most important differences between ATC and other universities in Armenia which undergraduate and graduate students mentioned were teaching methodologies, culture and applied knowledge.

As our goal is to provide high quality education, students were asked to say the three most important things ATC could do to improve the quality of education. Undergraduate students think that by Improving facilities/ equipment/technologies and their management, ATC can improve the quality of education as well. Graduate students suggestion is inviting better/more qualified/experienced faculty and give them more opportunities of study, exchange, internships.

When being asked whether they would like to study in the same institution, 92% of undergraduate students and 67% of graduate respondents who answered the question said that they would select ATC.

On question would you like to recommend this program to anyone 100% of respondents answered that they would recommend.

Conclusions

This survey has been implemented with a sole aim of gaining an in-depth understanding of current problems in both graduate and undergraduate programs and main concerns that students may have. Continuous implementation of these surveys is a step to optimization and increasing effectiveness of ATC programs.

There are some points which are impressive and should be noted. Both undergraduate and graduate students think that ATC program equipped them with skills and knowledge necessary to succeed in the job market. Also all of ATC students provided the highest rank for their experience in undergraduate/graduate program. ATC graduate and

Annex I: Student Exit Survey Analysis

undergraduate students feel confident that they can successfully perform tasks and overcome challenges. ATC students mentioned some important differences between ATC and other universities in Armenia. Those differences are teaching methodologies, culture and applied knowledge. Atmosphere and culture were factors which undergraduate and graduate students like the most about ATC.

One of the main concerns raised by ATC students is to change facilities, equipment and technologies. Those are the things which students didn't like the most about ATC.

The fact that over 30 % of graduate students would not select the same program if they had a chance to enroll again leads to the conclusion that the graduate students had higher expectations of the program. This can be a negative sign that there are some quality problems in graduate program so ATC should provide more attention to this. The fact that 100% of students would like to recommend this program shows that there is no another optimal alternative but if there any other alternatives, ATC can lose over 30% of students.

By better understanding students ATC can prepare agribusiness specialists armed with broad, economic, marketing, and managerial skills, up-to-date communication abilities and a good knowledge of English. These skills make the ATC graduates competitive in the growing regional agribusiness sector. As this survey showed that both undergraduate and graduate students were happy to study at ATC, this should provide motivation to faculty and staff to work better, improve the quality and satisfy students' needs and expectations.

The ICARE - International Center for Agribusiness Research and Education

invites you to participate in a videoconference training on

Application of Econometric Models Using STATA for Addressing Economic Questions

conducted by

Rafael Bakhtavoryan, PhD



DATES

The 2-day intensive training will take place on June 2nd and 3rd, 2016.

VENUE

International Center for Agribusiness Research and Education (ICARE).

Address: 74 Teryan Street, 0009 Yerevan.

TIME

18:30 - 20:45, Yerevan time (this includes a coffee break). For details, see the agenda below.

WORKING LANGUAGE

The working language of the training will be Armenian; however, the PowerPoint slides will be in English.

LEVEL

Intermediate.

TRAINING PARTICIPATION FEE

The training is **free of charge**. While similar hands-on trainings are quite expensive, ICARE fully covers the associated expenses for the participants, thus staying true to its charitable, social, scientific, and educational commitments. Upon successful completion of the training, the participants will be awarded a certificate of participation. To qualify for the certificate, participants must be present in all the sessions.

TRAINING DESCRIPTION

In this hands-on training, the participants will first be introduced to the basics of STATA. Then, they will be exposed to addressing economic questions (i.e., how much to produce, demand and supply functions and equilibrium price, estimation and empirical use of elasticities, basic forecasting, etc.) by estimating econometric models using the STATA software package.

TARGET AUDIENCE

The purpose of this training is to introduce the participants to STATA and to equip them with practical skills for making educated economic decisions. This training uses the regression analysis applied to various sample datasets and is intended for economists, business consultants, business analysts, economics students, and other interested parties that do economic analysis in any type of production or service industry (food industry, consulting, wholesaling/retailing, banking, etc.). Participants are not expected to be intimately familiar with STATA or econometrics; however, it is recommended that they have a basic background in economics and regression analysis.

Annex J: Application of Econometric Models Using STATA for Addressing Economic Questions Agenda

EXPECTED OUTCOMES

After completing the training, participants will be able to:

- Use the STATA statistical software package for empirical analysis
- Build and estimate an appropriate regression model
- Interpret and explain the estimation results
- Use the estimation results for addressing economic problems

SOFTWARE

The STATA 10 statistical software package will be used. A copy of the complete STATA 10 with all the functionality and capabilities will be installed on your notebook by the training organizers before the start of the training free of charge.

PRESENTATION METHODS

A combination of PowerPoint presentations and in-class computer exercises will be used. The participants will be provided with training material ahead of time. A dynamic discussion and exchange of ideas through interactive class participation will be strongly encouraged.

TRAINER

Dr. Bakhtavoryan received his Ph.D. in Applied Economics from Texas A&M University. Currently, he works as an Assistant Professor at Texas A&M University-Commerce, United States. Also, he teaches graduate courses, such as Econometrics, Managerial Economics, and Agribusiness Analysis and Forecasting, in the Master of Agribusiness (MAB) program at the Armenian National Agrarian University. Dr. Bakhtavoryan has worked as a Post-Doctorate Research Associate at the Agribusiness, Food, and Consumer Economics Research Center at Texas A&M University. His research interests lie in the areas of consumer demand analysis, applied econometrics, food safety, and forecasting. He has extensive experience in conducting trainings in Armenia (at Baker Tilly Armenia, ICARE).

REGISTRATION PROCEDURE AND DEADLINE

If interested, please register for the training by filling out the attached registration form (in English) or [DOWNLOAD HERE](#) and email it to the training coordinator, Lena Mamikonyan at lenamamikonyan@gmail.com. Registration deadline is **18:00 pm, May 29th**. The seating is limited. **ONLY SHORTLISTED APPLICANTS WILL BE NOTIFIED FOR PARTICIPATION.**

CONTACTS

If you have questions, please contact [Lena Mamikonyan](#) or call at **093 42-59-55**.

AGENDA

June 2	Time	Topics
	18:30 - 19:30	Basics of STATA
	19:30 - 19:45	Coffee break
	19:45 - 20:45	Basic correlation and regression analysis
June 3	Time	Topics
	18:30 - 19:30	How much to produce? Estimating demand and supply equations, equilibrium price. Elasticity estimation and their practical application
	19:30 - 19:45	Coffee break
	19:45 - 20:45	Identifying driving factors affecting sales. Forecasting economic variables accounting for trend and seasonality

Annex K: List of Participants Application of Econometric Models Using STATA for Addressing Economic Questions

Application of Econometric Models Using STATA for Addressing Economic Questions										
No	Name	Highest level	University	Specialization	Current year	Workplace	Position	Phone	Email	Computer
1	Maria Charyan	Master	ASUE	Management		Nosorog Corporation	Executive Assistant	77164161	mariacharyn@yahoo.com	Yes
2	Armine Poghosyan	Bachelor	ASUE	Mathematical Methods and Modeling in Economics		Rosgosstrakh-Armenia Insurance	Insurance Agent	95946465	arminka.94@mail.ru	Yes
3	Tigran Avagyan	Master	YSU	Mathematics		Ardshinbank	Auditor	55200616	tikoavagyan@yahoo.com	Yes
4	Lusine Hakobyan	Master	YSU	Sociologist		Kamurj	Credit controller	93217206	lusinenairyan@gmail.com	No
5	Ani Jabaghyan	Master	ASUE	Commerce		Nork Information analytical center	analyser	91302045	anijabaghyan@yahoo.com	No
6	Lilit Arshakyan	Bachelor	ASUE	Finance and Banking		CBA	Specialist	91117723	arshakyan.lilit28@gmail.com	yes
7	Sargis Karapetyan	Bachelors of Arts	AUA	BA in Business, Economics track	4	ACBA bank	Intern	93273300	sargis_karapetyan@edu.aua.am	No
8	Ani Tepoyan	MBA	ASUE	Business adminsitator				946800649	tepoyananai@gmail.com	No
9	Gayane Gabrielyan	Master of Finance	ASUE	Finance	2nd year of master	Inecobank	Specialist in Trainings and Career development center	95415757	gabrielyangayane92@gmail.com	Yes
10	Arman Asryan	Bachelor	YSU	Business Management	4th			77980511	arman.asryan@yahoo.com	No
11	Mher Ghazaryan	Bachelor, French Licence degrees	French University, Jean Moulin Lyon 3	Law	MBA RAU attendee			95599591	mhergghazar@gmail.com	
12	Meri Muradyan	BA in Economics	YSU	Economist	Finance			99332550	muradyanmary@gmail.com	Yes
13	Arpine Nurjanyan	MA degree	YSU	Actuarial and financial mathematics				77285001	arpine.nurjanyan@gmail.com	Yes

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14	Anahit Khachatryan	Bachelor	YSU	Economics, Actuary mathematics			Account executive	95456132		No
15	Hasmik Hovhannisyan	Diploma of high education	Yerevan Institute of national economy	management		National Statistical Service of RA	Leading specialist at industrial Statistics division	94931020	hhasmik76@yahoo.com	Yes
16	Narek Hovhannisyan	Master	YSU	Business Administrator		CBA	banking System Supervisor	99393030	Narek.hovhannisyan@cba.am	no
17	Asya Kostanyan	Bachelor	ASUE	Management	4			93659520	asya.kostanyan.94@mail.ru	Yes
18	Nikolay Manucharyan	Master	ASUE	Mathematical Methods and Modeling in Economics		Fuller center for housing in Armenia/ARD I program	Grant specialist	94703307	nik.manucharyan@gmail.com	Yes
19	Anush Sahakyan	Bachelor	YSU	Actuarial and financial mathematics		VTB armenia	Specialist in Insurance group	77788998; 95745765	sahakyan.anush1@gmail.com	Yes
20	Narek Mirzoyan	Master	ASUE	Economics		ACBA CREDIT Agrocile Bank	Intern	77251503	narekmirzoyan545@gmail.com	No
21	Ella Aghababyan	Master degree in Management	ASUE	Electronic Business				94358908	aghababyan.ella@gmail.com	Yes
22	Lusine Matevosyan	Bachelor	ASUE	International Economic Relations	4			10441240; 77833930	lusine_matevosyan@yahoo.com	Yes
23	Edgar Melkonyan	Master	YSU	Economist		CBA	Banking Supervisor	55535515	edgar.melkonyan@cba.am	Yes
24	Anna Matasyan	Master	ASUE	International Monetary Relations		Araratbank	Financial Market Analysts	55246737	matasyan_anna@yahoo.com	Yes
25	Svetlana Matakyan	Bachelor	YSU	Economics				55689886	smatakyan@yahoo.com	Yes
26	Hayk Gevorgyan	Yes	YSU	Bachelor	Higher Mathematics and Theoretical Physics / 4th course	-	-	96112982	haykgev95@gmail.com	

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27	Koryun Gevorgyan	-	YSU	Bachelor	Nuclear Reactor Physics , Applied Informatics & Economy/ current student	CANDLE Synchrotron Research Institute	Leading Lab Assistant Group EM Fields.	91037370	koryun.tsd@gmail.com	
28	Ani Yeghiazaryan									
29	Syuzanna Bilyan									

Annex L: Report Grape Cultivation/Phylloxera Management



Farmer-to-Farmer Armenia

Grape Cultivation/Phylloxera Management

Final Report by Ray Shaffer



Yerevan, 2016

I. EXECUTIVE SUMMARY

- **HQ Assignment number** - ARM-FY16-021
- **Assignment Country**- Armenia
- **Name of Host Organization(s)**-Agricultural Teaching Center (ATC)
- **Dates of Assignment**- May 20 – June 1, 2016
- **Summary of Scope of Work**

Armenia is one of the first places in the world where grapevine cultivation was practiced. The Areni-1 cave, near the town of Areni, contains the first known evidence of winemaking 6100 years ago. Armenia is also home to some of the oldest *Vitis vinifera* cultivars in the world. Cultivars such as Areni and Voskehat were being grown in ancient times. These cultivars are still in use today, as are more recent, uniquely Armenian, cultivars such as Kangun.

Armenia has five distinct grape growing regions: Vayots Dzor, Ararat Valley, Armavir, Aragatsotn, Tavush regions, phylloxera has been present in the latter two for a number of years, but thanks in part to a strict quarantine it was not present in Vayots Dzor or the Ararat Valley. However, it has recently been introduced into the Ararat Valley. Officially, 22 Ararat Valley vineyards are now known to be infected with phylloxera. Because symptoms of infection are not apparent on recently infected vines the actual number is very likely far greater than 22. Because phylloxera infections spread exponentially, there will soon be a large number of infected vineyards.

Grafting *Vitis vinifera* to rootstocks of American origin is the only effective means of managing phylloxera. However, because of the quarantine, rootstocks may not be used in the Ararat Valley. Growers are instead told to destroy their vineyards in return for some compensation from the government.

There is considerable misunderstanding about phylloxera in Armenia, resulting partly from the lack of quality training in modern viticulture practices.

Annex L: Report Grape Cultivation/Phylloxera Management

The specific tasks of the assignment were to:

1. Introduce phylloxera biology to students ANAU/EVN students.
2. Introduce the concept of a rootstock mother block
3. Introduce types of rootstocks that might be suitable to Armenian vineyards
4. Introduce practices of phylloxera detection and control

In addition, there were a number of vineyard visits scheduled to provide information to growers and answer their questions.

• Recommendation Summary

1. Work with the Ministry of Agriculture to revise the current grapevine quarantine.
2. Establish a rootstock trial block or blocks to determine suitable rootstocks for Armenian vineyards.
3. Work to improve the level of knowledge of grape growers, vineyard managers and vineyard owners.
4. Encourage the Ministry to conduct a survey of vineyards in the Ararat Valley where phylloxera is present so that it can be determined how quickly phylloxera is spreading there.

II. BODY OF THE REPORT

Host organization description: The Agricultural Teaching Center (ATC), through support from ICARE, is part of the USDA legacy in Armenia and is associated with the Armenian National Agrarian University (ANAU). ATC includes the EVN wine academy.

Problems addressed.

1. The current quarantine prohibits the importation of all grapevine material, including rootstocks, into the country. It also prohibits the use of rootstocks (except in Tavush and M. Karabakh).



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2. There is very little information about the use of grafted rootstocks in Armenia. Because of this, there are a number of misconceptions about phylloxera and rootstocks held by growers, vineyard owners and viticulture specialists.
3. There is a shortage of well-trained viticulturists and information about modern viticulture practice.
4. The current number of phylloxera-infected vineyards in the Ararat Valley is unknown.

1. Issue/problem: The quarantine was an effective strategy before phylloxera was introduced into Ararat Valley vineyards. Now that phylloxera is present in Ararat Valley however, the quarantine could actually contribute to the spread of this pest. Since rootstocks are the only effective way of dealing with phylloxera, the quarantine robs growers of the one effective tool they have to save their vineyards. This could encourage growers to illegally import grafted vines, which may be infected. The quarantine prescribes that growers destroy their vineyards. (They are



The host should work with the government to allow for the importation and use of

supposed to be compensated by the government, though some growers report not receiving their promised compensation.) After the vineyard is destroyed it cannot be replanted for three years. As more and more vineyards become infected vineyard acreage will decline rapidly. This comes at a time when the demand for grapes is increasing. The other danger with the current quarantine is that it might lead to a decrease in the acreage planted to Armenia's grape varieties since grafted vines using these varieties are not available anywhere.

Recommendations: With the introduction of phylloxera into the Ararat Valley the current quarantine policy is no longer an effective means of controlling the spread of this pest. The quarantine may actually exasperate the problem by encouraging the illegal importation of grafted vines. The host should therefore work with the government to create a new policy that allows the controlled importation and use of rootstocks.

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Action per Recommendation: A carefully controlled program could be implemented that would



allow dormant, phylloxera-free rootstock cuttings to be imported by a single certified agency. The government could create a system of certification and inspection to ensure the imported material is truly phylloxera free. The certified agency would then be allowed to propagate rootstocks in a phylloxera-free environment. The certified agency could make the rootstocks available to

certified nurseries, which would then produce and sell grafted vines to growers. Alternatively, the agency could sell grafted vines directly to growers. Creating Armenian nurseries would be preferable to importing grafted vines for several reasons: it gives the government more control over the material entering the country, it creates jobs in Armenia and keeps investment money in the country, it fosters the promotion and preservation of Armenian varieties (grafted vines using these varieties are not available anywhere). These nurseries should be encouraged to promote the use of Armenian varieties over European varieties. Some of these varieties may be the first varieties ever cultivated. It is very likely that through the use of these varieties Armenia will find its niche in the international market.

2. Issue/problem: Until recently phylloxera has not been present in most of Armenia's grape growing regions. As a result there is very little knowledge about phylloxera and the use of rootstocks. This lack of information has led to a number of misconceptions about phylloxera and rootstocks. These misconceptions include the following:

A. "Phylloxera can be adequately controlled by methods other than grafting to resistant rootstocks." There is no other effective way of managing phylloxera.

B. "Grafting Armenian varieties to rootstocks will change the flavor of the Armenian grapes." This is a common fear of growers when rootstocks are introduced to any viticulture area. There is no evidence to suggest this is true. However, since Armenian varieties have never been grafted to rootstocks it cannot be definitively demonstrated.

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C. “Armenian varieties have poor affinity with rootstocks.” There are *V. vinifera* cultivars that are incompatible with certain rootstocks. There is, however, no *V. vinifera* cultivar that is incompatible with all rootstocks. However, since Armenian varieties have never been grafted to rootstocks it cannot be definitively demonstrated.

D. “Armenian varieties are phylloxera resistant.” Although this assumption hasn’t been tested, it is highly unlikely. Armenian varieties share the same parentage as the susceptible European varieties. Armenian varieties are also succumbing to phylloxera in the Ararat Valley.

E. “Grafted vines cannot be buried to protect them from cold damage in the winter.” It is common practice in parts of Armenia to bury vines in the winter to protect them from cold damage. It is true that grafted vines are susceptible to cold damage at the graft union. However burying grafted vines in the winter is a common practice in the US and other parts of the world.

Recommendations: Establish at least one rootstock trial block.

Action per Recommendation: ANAU has access to vineyard land that could be used to establish a rootstock trial block. Ideally, this trial would be replicated in several grape-growing areas. It should include several of Armenia’s most promising indigenous varieties grafted to several different, carefully chosen rootstocks. The first step of establishing a rootstock trial would be to establish a rootstock mother block to provide rootstock material for grafting. Possible benefits of this trial would be to:

A. Provide concrete information about the performance of Armenian varieties on rootstocks. This would help to dispel many of the false assumptions that are being made about rootstocks and grafted vines..

B. Provide a source for rootstock material through the rootstock mother block as described above.

C. Provide an opportunity for students of ANAU, and EVN to become involved in viticulture research. The rootstock trial could provide research topics for Master’s and PhD students.

D. Create jobs for workers involved in establishing and maintaining the trial block.

E. Provide a demonstration block that could be used to help educate growers and vineyard owners.



3. Issue/problem: There is a shortage of professionals trained in modern viticulture practices. The changes in the Armenian grape industry over the past decade have been remarkable. A decade ago there were only large factory-type wineries that focused on brandy production and cheap, mass-produced wine for export to Russia. Since then a number of quality-focused

wineries have been created. These range from small, boutique wineries to large modern facilities. Many of these wineries have focused their production on Armenian varieties. ICARE, through the EVN Wine Academy, has provided valuable training to this industry and many of its graduates and current students are helping to drive this renaissance

Recommendations: EVN is well aware of the lack of training opportunities for viticulturalists. EVN teaches its students viticulture in theory and in practice. The students also gain some knowledge and experience in viticulture by assisting foreign experts invited to give consultancy to local producers.

Action per Recommendation: EVN should continue to address this need by providing training and seminars both for its current students and for viticulture professionals. EVN has established a cooperative program with Geisenheim University in Germany. This will present opportunities for EVN to invite experts in viticulture. Other experts could be invited through the Farmer to Farmer program.

4. Issue/problem: It is not known how quickly phylloxera is spreading in the Ararat Valley. The “official” figure is 22 vineyards, but in reality this number may be much higher.

Recommendations: A survey of vineyards in the Ararat would provide current information about the level of phylloxera infestation and the rate at which it is spreading.

Action per Recommendation: This information would provide all parties with an idea of the scope of the problem and the level of urgency needed to deal with it. It should be noted that the number of infected vineyards will be higher than what is detected. This is because early infection is

Annex L: Report Grape Cultivation/Phylloxera Management

difficult to detect. A second caution is that the spread of phylloxera happens at an exponential rate: what might seem like a minor problem today could rapidly become a very big problem.

Anticipated Impact:

1. Revision of the quarantine would allow for the controlled importation of rootstocks. A new policy would ideally be in place before spring, 2017.

2. Preparation of a rootstock mother block should be done in the fall of 2016. Dormant rootstock material should be imported in late spring 2017. This material could be propagated in the green house and transferred to the rootstock mother block in the spring of 2017. Ground for the rootstock trial block should be prepared in the fall of 2017. Dormant material from both the rootstock mother block and the ANAU's varietal block should be prepared in the winter of 2017-18 for use in establishing the rootstock trial block. Additional rootstock material could be used to enlarge the rootstock mother block. The trial block could be planted in the spring of 2018.

3. EVN has already begun to plan seminars in viticulture. The recently signed cooperation agreement with Geisenheim should provide opportunities for EVN to bring in experts. Farmer to Farmer could support this effort by providing experts in viticulture to participate in seminars etc. The Farmer to Farmer expert could also assist with the establishment of the rootstock mother block and trials.

4.. An accurate, current survey of infected vineyards in the Ararat Valley will give all parties concerned an idea as to the degree of urgency.

Key Contacts:

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Lilit Hakobyan- Program Coordinator VISTAA- +37493 43 09 69, lhakobyan@vistaa.org

Zara Muradyan, Associate Director, EVN Wine Academy- +374 95 47 74 11, zaramuradyan@yahoo.com

Armenak Ter-Grigorian, Head of Chair of Horticulture and Plant Protection, ANAU- +37493 42 55 07, arm-ter@rambler.ru

Number of Persons Trained (Training defined as: formally structured training activities, usually in a classroom, which do not lead to an academic degree, or a learning activity taking place in a classroom or workshop with learning objectives and outcomes):

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Male: 29

Female: 17

Please provide a list of their names.

Table 1. List of students trained on May 24, 2016

N	Name/Surname	City/Community	Occupation	Contacts
1.	Anush Avetisyan	Yerevan	Student	Anushik555@mail.ru
2.	Aramayis Mkrtchyan	Yerevan	Student	arammkrtchyan@mail.ru
3.	Arpine Manukyan	Yerevan	Student	arpine@semina.am
4.	Emma Tadevosyan	Yerevan	Student	
5.	Fernanda Ghazaryan	Yerevan	Student	Fernanda.ghazarian@gmail.com
6.	Mariam Saghatelyan	Yerevan	Student	invinoevn@gmail.com
7.	Mikayel Hovhannisyan	Yerevan	Student	Mishhov1995@mail.ru
8.	Nairi Grigoryan	Yerevan	Student	nairijan@gmail.com
9.	Agnessa Samvelyan	Yerevan	Student	agnessasamvelyan@mail.ru
10.	Vahe Mkrtchyan	Yerevan	Student	Vahe2929@mail.ru
11.	Vladimir Safaryan	Yerevan	Student	safaryanvladimir@gmail.com
12.	Zaruhi Kechechyan	Yerevan	Student	zkechechyan@gmail.com
13.	Artak Gabrielyan	Yerevan	Student	artwine750@gmail.com

Table 2. List of students trained on May 25, 2016

N	Name/Surname	City/Community	Occupation	Contacts
1.	Aram Tumashyan	Yerevan	Student	aram.tumashyan@gmail.com
2.	Bagrat Sargsyan	Yerevan	Student	b.sargsyan@yahoo.com
3.	Georgi Mamelyan	Yerevan	Student	Gosha.mamelyan@gmail.com
4.	Henrik Shaljyan	Yerevan	Student	h.shaljyan@mail.ru
5.	Ani Muradyan	Yerevan	Student	mouradiananina@gmail.com
6.	Artashes Jraghatspanyan	Yerevan	Student	Artashes.jraghatspanyan@mail.ru
7.	Silva Atoyan	Yerevan	Student	atoyansilva@gmail.com

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8.	Galina Muradyan	Yerevan	Student	Galina1257@gmail.com
9.	Hasmik Merkeryan	Yerevan	Student	Hasmik.merkeryan@mail.ru
10.	Sirun Hayrapetyan	Yerevan	Student	Sirun.hayrapetyan93@gmail.com
11.	Hasmik Grigoryan	Yerevan	Student	Hasmik-grigoryan-1984@mail.ru
12.	Meri Khachatryan	Yerevan	Student	Mary.khachatryan93@gmail.com

Table 3. List of members of Grape Growers Union trained on May 25, 2016

N	Name/Surname	City/Community	Occupation	Contacts
1.	Karen Kazumyan	Yerevan	Professor at ANAU	+37493 56 32 12
2.	Yurik Barseghyan	Yerevan	Associate Professor at ANAU	+37493 26 27 55
3.	Armenak Ter-Grigoryan	Yerevan	Head of Chair of Horticulture and Plant Protection of ANAU	+37493 42 55 07
4.	Gayane Avagyan	Yerevan	Associate Professor at ANAU	+37494 40 61 61
5.	Artem Ohanyan	Yerevan	Associate Professor at ANAU	+37498 16 10 08
6.	Aramayis Muradyan	Yerevan	Professor at ANAU	+37493 40 83 32
7.	Frunz Harutyunyan	Yerevan	Professor at ANAU, winemaker	+37491 07 13 42
8.	Artak Gabrielyan	Yerevan	Winemaker	+37495 52 24 55
9.	Areg Khojoyan	Yerevan	Winemaker	+37498 00 73 65

Table 4. List of students trained on May 26, 2016

N	Name/Surname	City/ Community	Occupation	Contacts
1.	Azat Nersisyan	Yerevan	student	azatnersisyan95@mail.ru
2.	Haykush Mkrtchyan	Yerevan	student	haykuhi.mkrtchyan97@gmail.com
3.	Siranush Hovhannisyan	Yerevan	student	siranush hovhannisyan78@gmail.com
4.	Eric Baghdasaryan	Yerevan	student	ero071998@gmail.com
5.	Norayr Hovakimyan	Yerevan	student	+374 77 53 42 66

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6.	Victor Asatryan	Yerevan	student	+374 77 86 64 88
7.	Samvel Grigoryan	Yerevan	student	+374 93 11 07 73
8.	Susanna Petrosyan	Yerevan	Lecturer at ANAU	susanna.petrosyan@yahoo.com
9.	Nune Simonyan	Yerevan	Head of enology department at ANAU	nunesim@mail.ru
10.	Gayane Avagyan	Yerevan	Lecturer at ANAU	<u>gayaneavagyan@yahoo.com</u>
11.	Narine Karapetyan	Yerevan	Lecturere at ANAU	nkarapetyan@gmail.com
12.	Anush Navoyan	Yerevan	Lecturere at ANAU	an.navoyan@yahoo.com
13.	Albert Nersisyan	Yerevan	Student	albertnersisyan@mail.ru

Number of Persons Directly Assisted (Persons who received face-to-face or hands-on technical assistance, training or advice from the volunteer. This is also considered program direct beneficiaries. “Persons Trained” are ALSO counted as “Persons Directly Assisted” and represent a sub-category of “Persons Directly Assisted.”)

Male: 28

Female: 22

Please provide a list of their names.

Table 4. List of persons directly assisted

N	Name/Surname	City/Community	Occupation	Contacts
1.	Karen Kazumyan	Yerevan	Professor at ANAU	+37493 56 32 12
2.	Yurik Barseghyan	Yerevan	Associate Professor at ANAU	+37493 26 27 55
3.	Armenak Ter-Grigoryan	Yerevan	Head of Chair of Horticulture and Plant Protection of ANAU	+37493 42 55 07
4.	Gayane Avagyan	Yerevan	Associate Professor at ANAU	+37494 40 61 61
5.	Artem Ohanyan	Yerevan	Associate Professor at ANAU	+37498 16 10 08
6.	Aramayis Muradyan	Yerevan	Professor at ANAU	+37493 40 83 32

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7.	Frunz Harutyunyan	Yerevan	Professor at ANAU, winemaker	+37491 07 13 42
8.	Artak Gabrielyan	Yerevan	Winemaker	+37495 52 24 55
9.	Areg Khojoyan	Yerevan	Winemaker	+37498 00 73 65
10.	Anush Avetisyan	Yerevan	Student	Anushik555@mail.ru
11.	Aramayis Mkrtchyan	Yerevan	Student	arammkrtchyan@mail.ru
12.	Arpine Manukyan	Yerevan	Student	arpine@semina.am
13.	Emma Tadevosyan	Yerevan	Student	ematad@mail.ru
14.	Fernanda Ghazaryan	Yerevan	Student	Fernanda.ghazarian@gmail.com
15.	Manushak Mikayelyan	Yerevan	Student	manushakmikayelyan@fmail.com
16.	Mariam Saghatelyan	Yerevan	Student	invinoevn@gmail.com
17.	Mikayel Hovhannisyan	Yerevan	Student	Mishhov1995@mail.ru
18.	Nairi Grigoryan	Yerevan	Student	nairijan@gmail.com
19.	Agnessa Samvelyan	Yerevan	Student	agnessasamvelyan@mail.ru
20.	Vahe Mkrtchyan	Yerevan	Student	Vahe2929@mail.ru
21.	Vladimir Safaryan	Yerevan	Student	safaryanvladimir@gmail.com
22.	Zaruhi Kechechyan	Yerevan	Student	zkechechyan@gmail.com
23.	Artak Gabrielyan	Yerevan	Student	artwine750@gmail.com
24.	Aram Tumashyan	Yerevan	Student	aram.tumashyan@gmail.com
25.	Bagrat Sargsyan	Yerevan	Student	b.sargsyan@yahoo.com
26.	Georgi Mamelyan	Yerevan	Student	Gosha.mamelyan@gmail.com
27.	Henrik Shaljyan	Yerevan	Student	h.shaljyan@mail.ru
28.	Ani Muradyan	Yerevan	Student	mouradiananina@gmail.com
29.	Artashes Jraghatspanyan	Yerevan	Student	Artashes.jraghatspanyan@mail.ru
30.	Silva Atoyan	Yerevan	Student	atoyansilva@gmail.com
31.	Galina Muradyan	Yerevan	Student	Galina1257@gmail.com

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32.	Hasmik Merkeryan	Yerevan	Student	Hasmik.merkeryan@mail.ru
33.	Sirun Hayrapetyan	Yerevan	Student	Sirun.hayrapetyan93@gmail.com
34.	Hasmik Grigoryan	Yerevan	Student	Hasmik-grigoryan-1984@mail.ru
35.	Meri Khachatryan	Yerevan	Student	Mary.khachatryan93@gmail.com
36.	Azat Nersisyan	Yerevan	student	azatnersisyan95@mail.ru
37.	Haykush Mkrtchyan	Yerevan	student	haykuhi.mkrtchyan97@gmail.com
38.	Siranush Hovhannisyan	Yerevan	student	siranushhovhannisyan78@gmail.com
39.	Eric Baghdasaryan	Yerevan	student	ero071998@gmail.com
40.	Norayr Hovakimyan	Yerevan	student	+374 77 53 42 66
41.	Victor Asatryan	Yerevan	student	+374 77 86 64 88
42.	Samvel Grigoryan	Yerevan	student	+374 93 11 07 73
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45.	Gayane Avagyan	Yerevan	Lecturer at ANAU	<u>gayaneavagyan@yahoo.com</u>
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47.	Anush Navoyan	Yerevan	Lecturere at ANAU	an.navoyan@yahoo.com
48.	Albert Nersisyan	Yerevan	Student	albertnersisyan@mail.ru
49.	Varuzhan Muradyan	v.Sasunik, Aragatsotn Marz	Winemaker	+37494 53 50 50
50.	Karlen Aghabekyan	v.Lukashin, Armavir Marz	Winemaker	+37494 98 01 12

- Feedback: What effect did your assignment have on you personally and/or professionally (for example, new knowledge, contacts, etc.)?