

An abstract painting with thick, textured brushstrokes in various colors including blue, white, green, yellow, red, and brown. The composition features stylized mountain peaks in the upper half and a central figure riding a white horse in the lower half. The overall style is expressive and modern.

2019 ANNUAL REPORT



INTERNATIONAL
CENTER FOR
AGRIBUSINESS
RESEARCH AND
EDUCATION



ICARE ANNUAL REPORT 2019

Illustrations by Sarkis Hamalbashyan

VISION

Develop a Sustainable Knowledge Capacity for the Food and Agribusiness Sector in Armenia.

MISSION

Serve as an International Center of Excellence to develop food and agribusiness leaders through state-of-the-art education programs coupled with cutting-edge research.





JOHN P. NICHOLS

Chairman

ICARE Foundation

Improving water use efficiency and quality in fish farming in the Ararat Valley leads to more resilient operations. Training of technicians in the use of Geographic Information Systems (GIS) technology and data management prepares Armenia for a new and more competitive global economy. These are but two of the projects summarized in this year's ICARE Annual Report. One of the consistent themes that guided our work since the beginning is to incorporate the latest technological advances in our curriculum and in our research and outreach programs. The economic and business principles and analytical tools we teach are essential to the evaluation, selection and implementation of new technologies in the agribusiness value chain. Mariam Grigoryan's story about competing in the Technology and Science Dynamics Competition is a great example of the accomplishments of our students both at home and abroad. ICARE with the United Nations Development Program (UNDP) and our partner, the Armenian National Agrarian University (ANAU), along with other organizations, launched the "Agri-Tech Startup Clash" providing an opportunity for a "shark tank" type of competition among our students and others in the agricultural technology field.

Global markets for food and agricultural products of every kind are becoming ever more tightly intertwined. Quality and delivered cost of production are key elements. Without adopting competitive production and food processing systems, Armenian products cannot hope to compete. New technologies are sometimes easy to obtain from other countries but often fail due to lack of

proper adaptation to the Armenian agricultural situation. In recent years ICARE has been sought out as an organization that has the capability to organize and do the background research and field studies necessary for successful adoption. Increasingly, our faculty and staff have been very successful in the competition for grant funding. Many of these funded projects undertake important local and regional studies related to the factors required for the economic adoption of modern technologically-intensive agricultural operations and systems.

Our recently launched Greenhouse Crop Production Management program is an example of creative initiatives developed by the ICARE team. A major new project "FRUITENIA" funded by the Austrian Development Agency is yet another commitment of ICARE to the future of Armenian agricultural development. Summaries of these new initiatives and others illustrated in our Annual Report provide additional documentation of the growth and development of ICARE as an agent of change in the Armenian agribusiness sector. As our commitments grow, so must our financial support. ICARE has increased its funding support significantly during 2019. We thank the donors who have committed to the vision and goals of improving Armenian agriculture and the development of a skilled professional workforce.

And, the best is yet to come with the development of the American School of Agribusiness/EcoFarm, an exciting new project which will provide an experiential learning and event venue nearby Yerevan. Join us in the adventure!



ARTHUR GRIGORIAN

Director
ICARE Foundation

Every day when I go to work walking along Teryan street where ICARE's main office is located. This neighborhood which we call Yeritasardakan (the place for youth) is where many academic institutions are located. This is where youth from Yerevan and other big and small cities and villages of Armenia rush to classes every morning. The eyes of youth are sparking with determination. This is a determination to put every effort for the

good of the Armenian nation. The eyes of the youth are also sparking with bravery. The bravery about readiness to face any challenge which may arise starting from the borders of our Motherland to the challenges they may face in their professional careers.

Education is a basis for development. Good education is a driving force for innovation. Families in Armenia have always accentuated the importance of education and at every possible chance are sending their children to schools and encouraged them to continue education at colleges and universities.

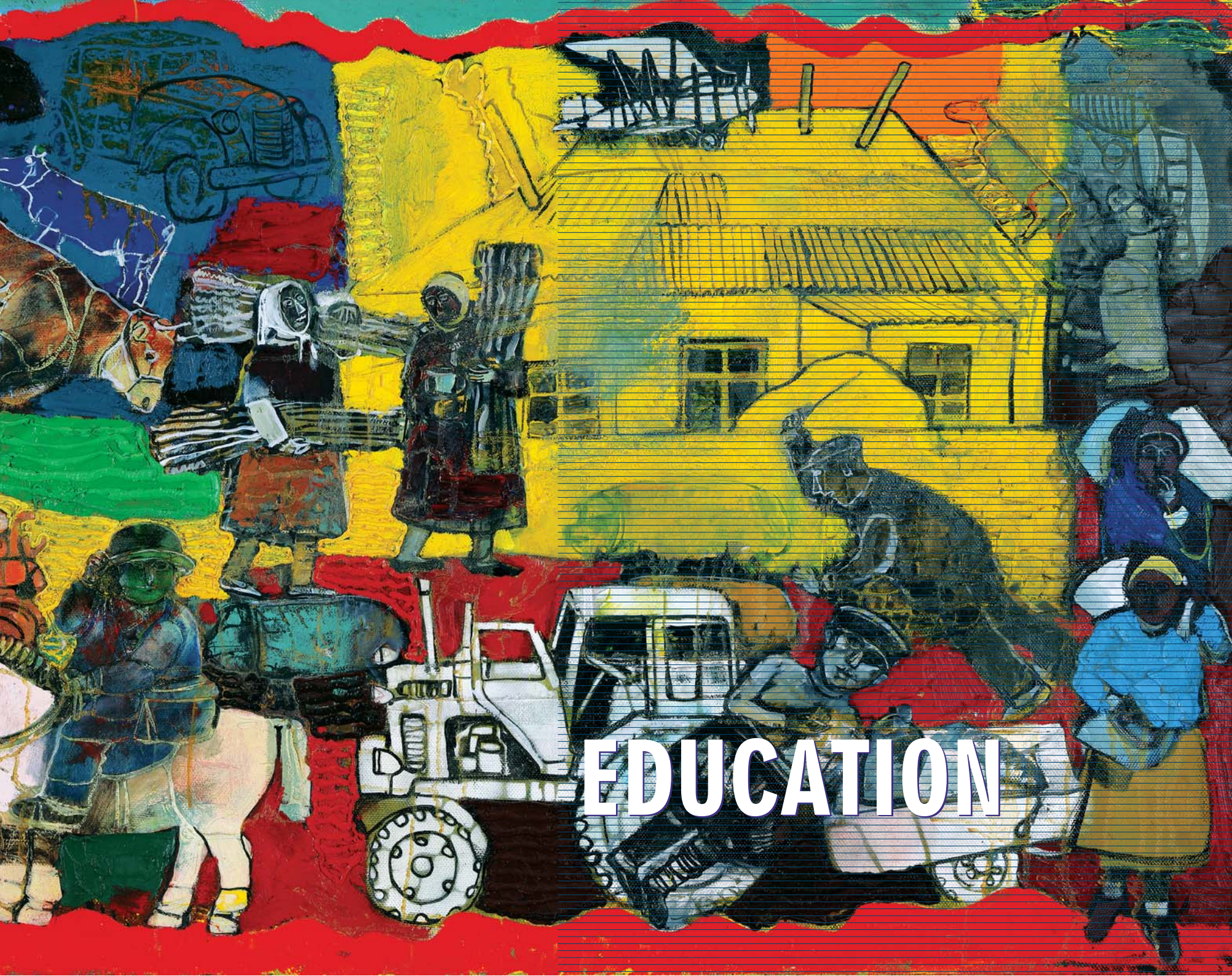
Going back to my everyday morning walk up along the Teryan street, I also witness ICARE students rushing to their classes, full of excitement and eagerness to learn something new about agribusiness and marketing through our Undergraduate Agribusiness Program. And then, after a few minutes, ICARE's corridors and comfortable classrooms are getting full of chit-chats and laughs just before 9 AM when the classes start.

Classes in most of the universities in Armenia finish by around 2 PM, and this is the time when Yeritasardakan area is getting quieter. Closer to the end of the business day, youth flees to open-air cafes ... but this is the very

time when student life starts again in ICARE. Besides morning classes, we also offer professional education to practitioners who finish their workday at 6 PM and who rush to ICARE for their 6:30 PM classes. It is very common for practicing professionals in their 30s and 40s to engage in our academic program: Enology and Wine Business, Greenhouses Crop Production Management, and the Master of Agribusiness. ICARE truly provides lifelong education experience. And our plan is to continue expanding the mission of training a highly professional workforce for the Armenian food and agribusiness sector.

ICARE is an institution which offers professional growth opportunities for its staff, and also provides excellent education opportunities for students, including those who cannot financially afford this education. Good education comes at a high financial cost. ICARE's team is working with its partners and donors to match the gifts with the needs of talented students. By making big or small gifts, our donors invest in the Armenia of tomorrow. This is a strategic investment for those who want to see Armenia grow strong and secure, stable, and sustainable!

A vibrant, abstract painting depicting a busy market scene. The composition is filled with various figures and animals, including people on horseback, a man on a donkey, and several cows. The background features a house and a large, colorful structure. The overall style is expressive and colorful, with a strong emphasis on red, yellow, and blue. The text "2019 ANNUAL REPORT" is overlaid in large, bold, yellow-green letters on the left side of the image.



EDUCATION





GRADUATION CEREMONY 2019

In June we traditionally welcomed our Undergraduate (UAB), Master's (MAB) and Enology and Wine Business program graduating classes of 2019! This year a joint graduation ceremony was celebrated at ICARE's Dream Lab with a special emotionality!

The faculty members, staff, the families and friends were invited to join our graduating students on their special day. Among the dignitaries who attended the event were Deborah Grieser, USAID Armenia Mission Director; Vardan Urutyan, ANAU Rector; Wilhelm Hugo, Team Leader Armenia of the GIZ PSD TVET; Jon Hanf, Professor at Geisenheim University; and John Nichols, the Chairman of ICARE and Professor Emeritus of Texas A&M University who joined through a video message.

After the ceremony, there were traditional cake cutting and a special wine tasting of our newly created student wines, as well as balloons and music. All this marked the momentous occasion in this special and memorable way!

“It is high time for celebration and achievement. There is reflection on past trials and successes as well as hope for the future” – mentioned the UAB-2019 alumni during the graduation ceremony.

ICARE adheres to its mission to provide students with many opportunities to enter the job market with their strong academic background and experience acquired both from practical activities during the classes, as well as participation in seminars, training programs, fairs and competitions. "In fact, 98% of our new graduates are already in the industry such as in the banking system, entrepreneurship, consultancy and so on", said ICARE Director Arthur Grigoryan. Mr. Grigoryan also thanked Judith Saryan and Victor Zarougian who were present at the ceremony and all the other friends and supporters of ICARE for their continuous support. "I want to express my special appreciation for your substantial contributions that provide a life-changing opportunity to our students to study at ICARE and then work for Armenia."

PRIME MINISTER NIKOL PASHINYAN VISITED ANAU AND ICARE



On April 15th, Prime Minister Nikol Pashinyan, Minister of Education and Science Arayik Harutyunyan and other dignitaries visited ICARE as part of their visit to Armenian National Agrarian University to meet the students, get acquainted with the amenities and academic programs provided by ANAU and the ICARE. Prime Minister Pashinyan valued the contribution that the University has in the overall development of agriculture through the research projects conducted and various modern educational programs in agriculture.

Nikol Pashinyan was presented the up-to-date teaching methods with cutting-edge technologies and all the inspiring facilities that appeal hundreds of students to come from different parts of the country and abroad to learn agriculture and apply their knowledge for the prosperity and welfare for people.

U.S. Ambassador to Armenia Lynne M. Tracy visited ICARE

Ambassador Tracy was impressed by the first visit when she was introduced to the student success stories of this institution.

The visit coincided with the opening ceremony of the vertical farm, which has been engineered and constructed by one of our students with the support of

his peers at ICARE. Her Excellency Lynne M. Tracy also met the ICARE students and had a very warm conversation with them as our students presented their experience in ICARE family and the past route in the long-distance journey.



"Students graduate ICARE equipped with multidimensional experience and knowledge which makes them highly competitive in the job market in Armenia and beyond"- mentioned U.S. Ambassador to Armenia Lynne M. Tracy during her visit to ICARE.



ICARE OPENS DOORS TO INTERNATIONAL EDUCATION

By Ruzanna Grigoryan

UAB program student



Traveling broadens your horizon: that's one thing ICARE senior class students will absolutely agree with. During their junior year, twelve students spent the spring semester in different European universities within the framework of Erasmus+ International Credit Mobility Action.

First of all, a program like this helps us grow personally. We meet people with different backgrounds, understanding and points of view and sharing diverse ambitions and dreams.

At the same time, we had a chance to grow professionally, to have more spacious perspectives and better understanding of how things work worldwide.

We loved our experience: the great chance to explore new approaches in education, to meet students and professors. It became a great experience to learn how we can represent ourselves, our country and culture. But one thing we were most excited about was return to Armenia and to the big and warm ICARE family.

AN UNFORGETTABLE EXPERIENCE AT ICARE



By Taleen Haneshian

ICARE intern

When I joined the ICARE team, agribusiness was an unfamiliar sector to me; one that highly interested me in terms of its great impact to the people in Armenia and its growth potential. I graduated with my MBA at Queen's University past spring in Canada and decided to spend some time in Armenia to learn more about the agriculture sector which amounts to a large portion of the country's economy. After my 3 months of interning at ICARE, I have a broader understanding of this sector in Armenia. My initial impressions of ICARE remained the same during my time there- high quality and innovative education alongside incredibly talented staff. My internship consisted of a wide range of duties within the center. In short, I was assigned to work closely with research directors in analyzing and preparing material for upcoming publications in the fishery and dairy industries. I attended workshops organized by the external researchers to conduct focus groups with local farmers in the region, to discuss challenges and exchange best practices. These workshops gave a much clearer understanding of the current circumstances and the opportunities to further develop this sector within the country. Learning from a group of ambitious leaders and their



contributions reaffirmed that ICARE and the agribusiness in Armenia has a promising future. ICARE truly lives up to its mission of providing state-of-the-art education programs and cutting-edge research and I am proud and honored to be part of their story for three months. It's been enriching and rewarding, to say the least.

MARIAM GRIGORYAN'S SUCCESS STORY

OUR students are not only involved in educational activities in the university, but also initiate participation to different programs and trainings outside the university.

Senior class student Mariam Grigoryan is leading the Start to Plant start-up with a few other ANAU students. The team came up with solution to provide high survival



rate in the site with not-favorable conditions for traditional tree plant growing. The team participated in “Driving Agro Innovations” innovative agribusiness start-up competition project organized by New Technology Education Fund (NTEF) together with “Technology & Science Dynamics” (TSD) in cooperation with the Municipality of Monfalcone, Technological Park of Pordenone and FVG Region Farmers’ Association (Italy). Mariam as a team lead got an opportunity to pitch for the innovative new technology and won the second prize. She was also awarded a chance to pitch in Italy. Earlier in December 2019, the team also pitched during ANAU AgTech Incubator Start-up clash and got special prize for testing the technology.

“I think studying at ICARE helps a lot to understand what you really want, it gives the confidence to try, the courage to lead and knowledge to address the failure.”



18 NEW PROFESSIONALS TO JOIN THE GREENHOUSE INDUSTRY

Greenhouse crop production is a very important sector in the Armenian agriculture and has a strategic value for the whole economy in terms of food security through sustainable agriculture. The industry is growing year by year creating high demand for the greenhouse professionals. Based on market needs assessment conducted in 2016-2017, the 8-month **Greenhouse Crop Production and Management (GCPM)** certificate program was developed at ICARE, with the second cohort successfully completing the program in 2019.

This year ICARE prepared 18 professionals, who are ready to input their efforts, knowledge, and practice in the industry. All the graduates are now powered with the most up-to-date knowledge about the greenhouse structure, required resources and greenhouse microclimate strengthened with innovative technologies.

Along with the technical knowledge about greenhouse crops and their production, they are equipped with skills of efficient use of finances, business plan writing, and marketing of greenhouse products, human resource management, and leadership.

This program is a perfect opportunity for those who want to enhance their knowledge with frequently organized internships, field trips, and hands-on experience.

THIS PROGRAM GAVE ME A PROFESSIONAL CREDIBILITY REQUIRED FOR SUCCESS

By **Albert Ghazaryan**

Greenhouse Crop Production and Management program student

In a nutshell, the Greenhouse Crop Production and Management program was one of the greatest achievements in my career.

Being a specialist in plant protection, I was immediately attracted by this course and wanted to take part in it. Before taking this course, I had no idea about the hydroponic and other modern systems for growing plants and vegetables. However, this class gave me the chance to have a comprehensive understanding and knowledge in greenhouse construction, management and its business planning.

We were taught by professionals with rich experience who had their own contribution and investment in the



development of the greenhouse sector. They were happy to share their skills and knowledge with us.

We were also involved in the greenhouse activities such as planting and monitoring. One thing that I liked the most was writing the greenhouse business plan, which involved all of the modules that we covered during the course.

Now, I provide professional consultancy and I have a goal to deepen my knowledge in modern agriculture, particularly hydroponic systems.

A PRIZE FOR THE MOST INNOVATIVE AGRICULTURAL SOLUTION



On the 21st of December, UNDP ImpactAIM and ANAU Agri-Tech incubator joined efforts with ICARE along with other partners and launched the Agri-Tech Startup Clash. Agricultural startups, experts and other representatives from Armenia came together to develop solutions for modern-day challenges of the agriculture sector. 16 startups presented their innovative solutions, and three of them were awarded monetary prizes.

One of the winners were GCPM student Gevick Davoodi who presented the Saffronomatic start-up. In addition, a special monetary prize was awarded to the TreeCone team, with a UAB undergraduate student being part of the team.

Saffronomatic is a world-class international agritech know-how, which will produce an expensive saffron spice in a compact indoor microclimate through aero-hydroponic system. Growing saffron with this system will be 4 times more productive in terms of quantity than with the traditional method.

UAB INTERNSHIP EXPERIENCE

By Anna Martirosyan

Being an intern at The Crowdfunding Formula was a great responsibility for an undergraduate student. A company which is full of inspiring and motivating success stories, strategies and tactics in various stages of the crowdfunding journey had a huge impact on my life. During my 8-week internship, which was also my flagship in the professional career path, I learnt more than many about business and its multidivisional aspects, including affiliate and social media marketing, researching, B2B marketing and so on. The supportive team helped me accomplish my tasks properly and learn by doing. I was enrolled in several departments, which helped me understand where I fit most for future consideration of my career path.



GIS AND REMOTE SENSING CERTIFICATE PROGRAM

The second round of the two-month Geographic Information Systems (GIS) and Remote Sensing (RS) certificate program was successfully completed in 2020. The course's objectives were to introduce GIS and RS technologies, including drones, along with theoretical and practical exercises to aid participants to develop skills in the application of ArcGIS software. The program participants acquired a lot of tools and techniques which are applied in GIS and Remote sensing, including a review of mapping fundamentals and an exploration of the use of spatial data in mapping.

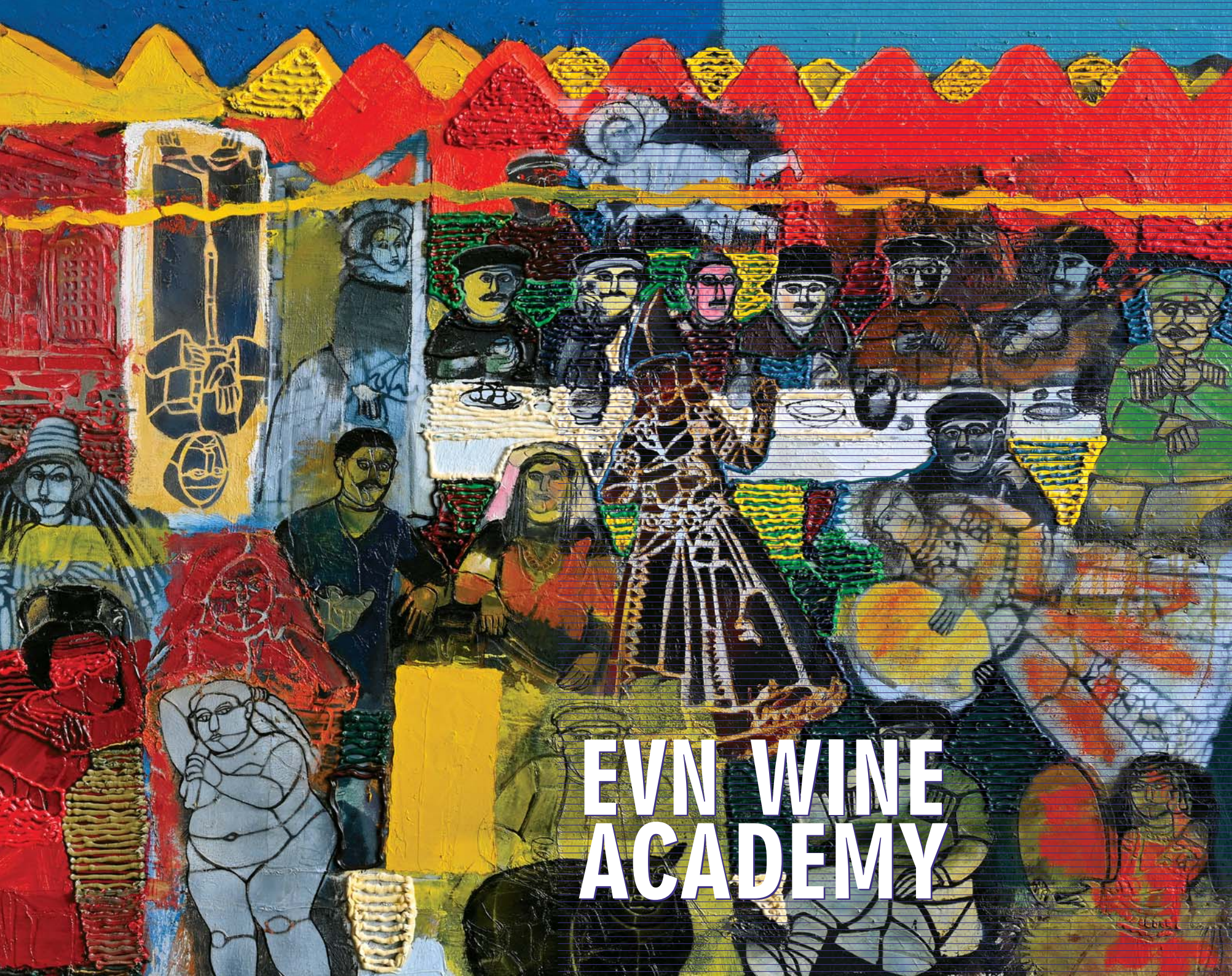
Professor Mark Guizlo, who has taught Geography and GIS in the United States for twenty years, was the main instructor, hosting all lectures with Professor Pakrad Balabanian, Senior Technical Consultant and Advisor for Esri, aiding with software access, permissions, and other inquiries. Both professors attended the classes using distance learning technologies.



GIS in agriculture helps farmers to achieve increased production and reduced costs by enabling better management of land resources. Therefore, ICARE strongly believes that this short-term course will meet the needs of Armenian agriculture making it more sustainable and preparing well-armed specialists in developing this important sector.

2019 ANNUAL REPORT





**EVN WINE
ACADEMY**

"WINE WEEKS IN ARMENIA" SUMMER SCHOOL AT ICARE

"Wine Weeks in Armenia" summer program had a successful launching in 2019. The participants, who had Armenian roots but were from different countries, joined EVN Wine Academy students for a two-week wine business course as well as experienced the renowned Armenian hospitality. The footprints that the program left to these people were immense. Now they know much about the historic World of Wine and the Armenian wine industry in general. The course was not just about theories, it was a very active prac-

tice including three-day trips in the main wine regions of Armenia. The participants got acquainted with the traditional dining experience and the cultural heritage of the first nation to adopt Christianity. Apart from getting knowledge on the global wine business, on how to implement strategies and create their niche market, students had also a two-day masterclass on sensory evaluation and introduction to Armenian wines. During all this time two great teachers accompanied the students: Professor Jon Hanf from Geisenheim University in Germany (Wine Business) and Artem Parseghyan, Chief Winemaker at Trinity Vineyards, Armenia (Wine Fundamentals).

The Summer School program will be held annually and we expect to see more students interested in wine in the summer of 2020!



LEARNING ABOUT WINE CAN BE FUN!

By **Paulina Avetisyan**

Wine Weeks in Armenia
program participant

The summer of 2019 was indeed a memorable one, as I had the privilege to attend the Wine Weeks program in Armenia from 15th to 30th of July, organized by the EVN Wine Academy.



During these two weeks I discovered the big world of wine industry. The program offered me more than I expected: from great lectures on wine business to visits to extraordinary vineyards in the beautiful Armenian land.

One of the most memorable moments was to attend lectures of Professor Hanf from Geisenheim University in Germany, thanks to whom I understood how to find and develop a unique competitive advantage for your business to survive in the global market.

This program is so rich in events and useful information, that I wouldn't change anything. The only thing I regret is that the time flew by so fast.

I would like to thank the EVN Wine Academy for such a unique opportunity. I wish you all the best in your endeavors and I look forward to summer 2020 to be back for new events and new adventures at your summer school.

WINMASTER PROGRAM AT EVN WINE ACADEMY

The WINMASTER program was launched at ICARE / EVN Wine Academy with the aim to train Syrian-Armenians and local Armenians in the field of enology and wine business. The program was structured as an intensive training composed of 6 different modules.

During this four-month intensive training program, 14 participants obtained in-depth understanding of winemaking and wine business, learning the main aspects of this industry: production, marketing, sensory evaluation, and sanitary. As the main lecturers of the course were EVN Wine Academy's professors, they made the program even more interesting through several field trips to Armenian wineries and vineyard visits.

// The WINMASTER program brought together people of different ages and backgrounds to gain practical knowledge in the winemaking industry within a very short period of time. It was also a unique platform for meeting and sharing experiences with real-world winemakers," says Gohar Gharibyan, a program participant.

The WINMASTER program was financed by "Economic and Social Participation of Vulnerable Displaced Persons and Local Population in the South Caucasus" (EPIC) programme implemented by GIZ on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ).



Getting Closer to My Dream

By Nelly Makinyan

EVN Wine Academy student

It was my first experience in wine production. Before, I was aware only about the theory of the long story. Therefore, it was a whole new world for me which I was so passionate to discover. On the first day of my internship, on our way to the winery I was so nervous, but as soon as I entered the winery all my fears and doubts disappeared immediately. From the very beginning all workers of the win-

ery were very friendly to me and were eager to help me learn everything in wine production. The thing I really appreciated about the winery core workers was that they never got tired to show or teach me something and then, they let me accomplish some tasks on my own. I think it is the key factor during an internship when you take part in all processes by yourself because this is the only way to learn and become professional based on your mistakes and experience.

I am very thankful to have such a wonderful experience. Besides the hard work I also remember the magical aroma of oak combining with the wine.

This internship helped me have a better understanding about winemaking process and I witnessed the huge efforts it can take to make high quality wines.



The Experimental Vintage of EVN Wines 2019

was a really thrilling year! We have bottled and released our



experimental vintage of 2018 wines! The three wines, Areni Red Dry Reserve, Voskehat White Dry and Areni Rose Dry were created jointly by our professors and students at the EVN Wine Academy's experimental winery and cellar in Voskehat village. Inspired by their professors, our students have selected three different indigenous Armenian grape varieties for their first wines. Starting from the harvest and till the bottling everything has been done by our students. Using classic techniques and traditional methods, they have created well-structured, fresh and acid-driven wines. Next year — in 2020 — we will produce the first commercial vintage of wines of EVN Wine Academy!

RESEARCH AND DEVELOPMENT

Wine quality assessments by EVN Wine Laboratory

Since 2017 EVN Wine laboratory has been conducting wine quality assessments for the wineries and wine producers in Armenia which value the high quality of the produced wine. The head of the laboratory, CSc. Mikayel Mikayelyan and his assistant Agnessa Samvelyan closely work with the wine producers providing them with accurate analytical data.

The number of winemaking companies and individuals is increasing every year and the laboratory has its important contribution to the development of this sector. The laboratory is constantly acquiring and applying new methods and equipment, which allow to conduct the analysis more efficiently saving scarce resources and time. Recently, collaborating with GIZ Armenia, the laboratory acquired and installed new

equipment for clean water, application of which in the branch laboratories is quite rare.

The laboratory is armed with HPLC (High Performance Liquid Chromatography) analytical system, which will soon help experts conduct the analysis more efficiently and get more accurate data.

In addition to offering wine testing services to the industry, EVN Laboratory is a unique research and educational unit of ICARE. EVN Wine Academy students learn the practical modules of Wine Chemistry course right in the laboratory and, happily, most of the students get job in laboratories operating in the industry.

Our laboratory is happy to work with all wine producers and support the industry development.



AMERICAN SCHOOL OF AGRIBUSINESS / ECOFARM

The logo for ICARE, with each letter in a different color and texture: 'I' is yellow and red, 'C' is red, 'A' is red, 'R' is blue and green, and 'E' is blue and green.

is planning to establish an EcoFarm school on the outskirts of Yerevan to bring nature, the environment and modern farming techniques to the doorstep of city dwellers. The EcoFarm will provide opportunities for everyone to experience nature firsthand and grow their own ideas.

There is an increasing trend among youth, especially in the capital city of Yerevan, who visualize their every business idea through the prism of technology. ICARE aims to combine technology with environmentally conscious and profitable agriculture. The EcoFarm School will be a “Learn by Doing” agricultural technology and agribusiness incubation center, promoting environmentally conscious agriculture, a healthy lifestyle and nature appreciation. Having in mind the four pillars (agriculture, environment, technology and business), EcoFarm will provide agribusiness incubation opportunities for ICARE students and other students and young professionals who are passionate about establishing their agribusiness start-ups.

EcoFarm will be an agribusiness incubator and agricultural startup accelerator in Armenia. The agribusiness start-ups incubated at EcoFarm will incorporate

components of high-tech farming, organic farming or biodynamic farming. It will also serve the needs of younger students. There will be educational facilities for young children to spend their day learning about nature and the environment and experiencing life on an eco-friendly farm with small animals, gardens and orchards. “EcoFarm will provide an opportunity for active farming work minutes away from downtown Yerevan,” explained ICARE director Arthur Grigorian. “You can bring your kids to a farm where they can interact with small animals, water their own lettuce plants, harvest their own melon, and pick apricots or blueberries. Is there any better gift for a kid that a caring parent can make? EcoFarm will be exactly this facility!”

// Let's nurture the minds of the Armenian youth in understanding and appreciating nature and incubating environmentally friendly agribusiness startups"

THE WINE MAP

"Armenian Wines Are Kicking with Quality" was the title of an article published in Forbes, the world-famous American magazine. Indeed, Armenian winemaking is still in course of renaissance and many wine enthusiasts from all over the world visit Armenia to taste, smell and feel the great products from sun-kissed grapes grown in Ararat Valley. However, tourists or just the local wine lovers sometimes don't get comprehensive information about the wine regions of Armenia and, based on the market assessment as well, ICARE decided to design the Wine Map of Armenia which will be an excellent component in the development of wine tourism.

So, what information will be available on the wine map? First of all, there will be all the wineries of Armenia from South to North, and anybody will have the opportunity to choose where to go and get acquainted with the winery well in advance.

Then all the visitors will be able to check whether that specific winery provides accommodation and food as well.

On the backside of the map, the small center of capital city Yerevan will be shown. All the wine shops, bars and cafés will appear on the map, which will enable the visitors to find the place they want to spend a quality time quite easily. Wine map will have a part dedicated to the Armenian history and traditions.

The Wine Map of Armenia is still in the development stage and will be issued in 2020.



VERTICAL FARM (V-Farm)

Vertical farm on the first floor of ICARE is already a reality. The project was proposed back in May 2019 by Gevick Davoodi, who was a student of the Greenhouse Crop Production and Management program. It was implemented with the support of the ICARE Foundation and Mr. Davoodi's course-mates.

This initiative shows the practical component of our educational programs and creates a base for further development of this field. The current students of Greenhouse Crop Production and Management have the chance to visit the farm while covering the module of Hydroponics.

Currently, we are growing two types of plants in the farm, lettuce and rosemary and we are planning to conduct some more experiments growing other types of vegetables too.



We constantly organize excursions to vertical farm for both students and schoolchildren, who can be inspired to construct their own sustainable farm and promote this practice, which is environmentally friendly and profitable.

RESEARCH PROJECTS

Fruitenia Project

The FRUITENIA project, which is funded by the Austrian Development Cooperation and implemented by ICARE Foundation, will modernize the agronomy curricula through introducing new courses and modernizing the contents of the existing ones at the Armenian National Agrarian University (ANAU) to include concepts of environmentally friendly, sustainable and climate smart modern fruit production approaches. The project will conduct Training of Trainers for ANAU and TVET instructors to develop the capacity of the teaching staff. A short-term professional certificate program in fruit production will be established at ANAU for fruit producing farmers, instructors and students.

The project will establish an environmentally friendly and climate smart demonstration orchard of intensive fruit production, which will be used for educational purposes. Students, teaching staff, practicing professionals, farmer groups, and other fruit production sector stakeholders will have an open access to the orchard and the nursery for visits and hands-on trainings. The project will develop and launch a fruit production related e-learning open-access platform in Armenian language which will be accessible to all fruit production stakeholders including farmers, students, ANAU and TVET faculty, experts, and others. Finally, the project will organize a Youth Camp to raise awareness about the importance and opportunities of fruit production in Armenia among youth.

With funding from
Austrian Development Cooperation

ICARE
INTERNATIONAL CENTER FOR
ADVANCED RESEARCH AND
EDUCATION

**FRUIT PRODUCTION
SECTOR
DEVELOPMENT
PROJECT
IN ARMENIA**

frúitenia

- BETTER TEACHING MATERIALS
- TRAINED FACULTY
- UP-TO-DATE INFRASTRUCTURE FOR LEARNING
- ENHANCED COMMUNICATION

Competitive Fruit Production Sector

Gender Equality & Social Inclusion

Sustainable & Climate Smart Agriculture

AGRIS-Survey

The new methodology of data collection was developed by ICARE expert Armen Asatryan.

In the scope of the project, ICARE also developed inception, quarterly and annual questionnaires on production of agricultural holdings based on the current annual questionnaires used in Armenia and the



agricultural census questionnaires, AGRIS generic core module questionnaire and data needed for priority SDG indicators.

For all surveys a manual was prepared.

Previously the NSC was conducting paper-based surveys; however, with the help of the AGRIS project, currently the NSC conducts the surveys with a software called Survey Solutions (SuSo). This considerably saves time and other resources.

In addition, ICARE conducted trainings for 130 participants (enumerators and supervisors) from Armavir, Kotayk, Tavush and Shirak regions on AGRIS Armenia inception, quarterly and annual questionnaires and SuSo application.

Trainings consist of theoretical and practical sections.



ICARE Foundation jointly with FAO is implementing the AGRIS project in Armenia, which aims to improve the process of collection of agricultural statistical data in Armenia. The main stakeholder of the project is the Agricultural Division of the National Statistical Committee (NSC).

ICARE research team is actively engaged in scientific conferences

Attending scientific conferences can enhance the researchers' analytical thinking. ICARE research department has adopted this strategy, and the team benefits from each conference in several ways, getting new information and enlarging the professional network and scope for the future researches.

In 2019 the Research Department participated in several conferences on topics related to agriculture and its future. Among those, we had also award-winning presentations on international platforms.

In June, the head of ICARE's research division Lusine Tadevosyan presented the topic "Factors affecting milk productivity in Armenia" during the Armenian Economic Association Annual conference and received the Voskeni Wines Award.

In the International Conference on Agriculture, Food and Biotechnology in Singapore, Lusine Tadevosyan received the best presentation, award and the topic she presented was **"The role of RASs in Armenian aquaculture industry: current challenges and future opportunities"**.



“Technology Acceleration for the SFEWRA” Project

The Project, which was implemented by ICARE, was to develop efficient water usage models, including recirculating aquaculture systems (RAS) for small and medium fish farms located in Ararat Valley. As a result, 15 small and medium fisheries received environmentally friendly models for farm intensification. The proposed models include technical description of water-efficient fish farm models, including description of the RAS model, Nitrogen management in RAS, necessary financial investments, cost-benefit analysis, etc. In the scope of the project a grant was provided to one of the fish farms located in Ararat Valley for installation of RAS system for farm intensification, including installation of aquaponics system, and water efficient use.

Furthermore, within the scope of the “Technology Acceleration for the SFEWRA” project, the current system of one beneficiary fish farm was upgraded into a recirculated aquaculture system for farm intensification and water-efficient usage. In addition, a Aquaponics system was installed, which will ensure the additional revenue for farmers. The newly built system is based on an existing complex raceway configuration, where, after the installment of a Danish model trout farm, a semi-closed RAS for a part of the current system-intensive fish production of approxi-

mately 10 tons of rainbow trout per year is expected.

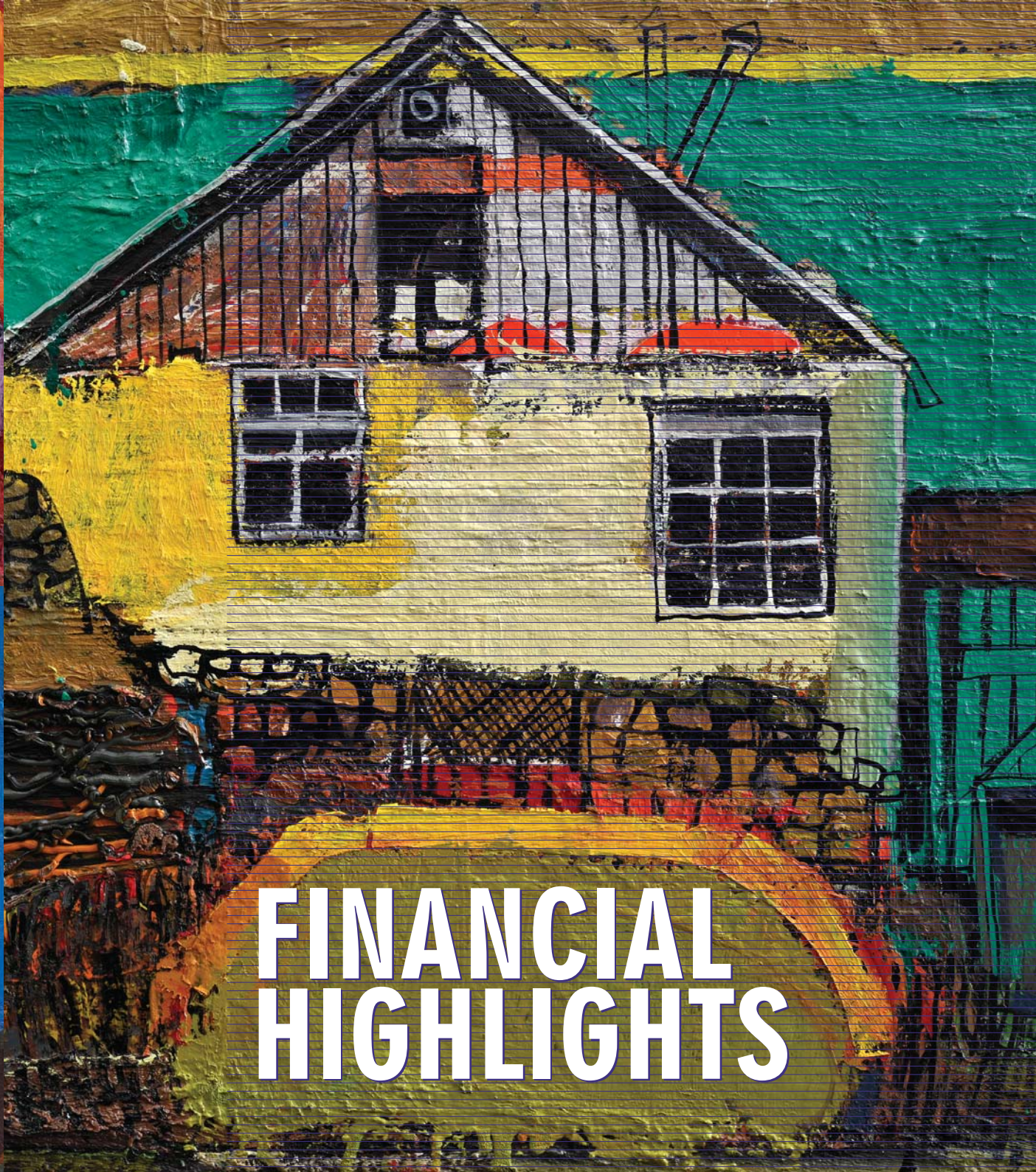
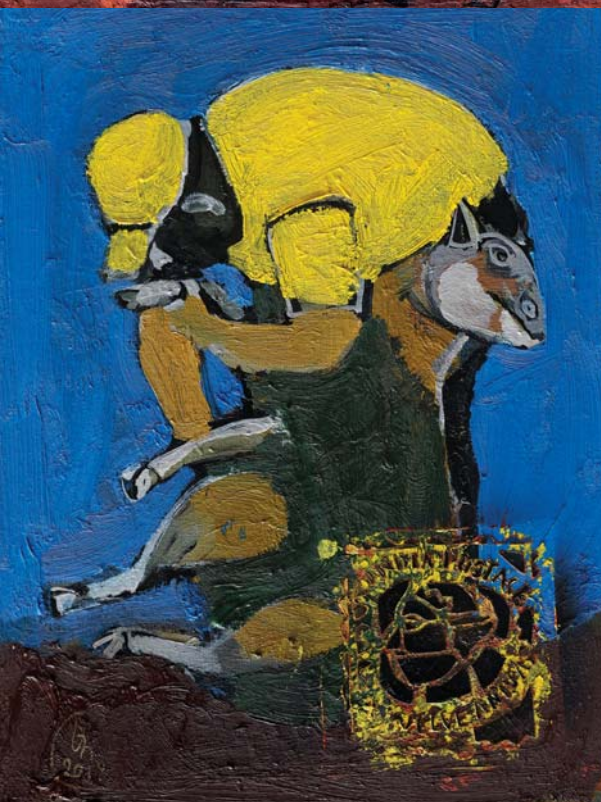
The integration of semi-closed RAS configuration in a part of the farm results in several environmental benefits. In fact, the water is used 4 times, thus resulting in increase of water efficiency.

Incorporation of a sludge and wastewater treatment units, capable of removal of ammonia (highly toxic for aquatic animals) and sludge (major source of nutrients in aquatic environment) will further increase environmental sustainability of the farm, reducing pollution of receiving water bodies by these compounds.



2019 ANNUAL REPORT





FINANCIAL HIGHLIGHTS

2019

ICARE

FINANCIAL HIGHLIGHTS

Sources of Support to ICARE

USD

■ United States Agency for International Development (USAID)	\$ 91,878
■ German Agency for International Cooperation (GIZ)	\$ 22,503
■ United Nations Development Program (UNDP)	\$ 49,610
■ The World Bank in Armenia	\$ 191,804
■ Maastricht School of Management	\$ 23,347
■ Euroquality	\$ 15,093
■ Austrian Development Cooperation	\$ 387,831
■ Japan Embassy in Armenia	\$ 68,161
■ Food and Agriculture Organization of the United Nations	\$ 99,349
■ Fee-based services	\$ 40,683
■ Donations from Individuals and Organizations	\$ 405,511
TOTAL	\$ 1,395,770

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