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ADVANCED SCIENCE & PARTNERSHIPS FOR INTEGRATED RESOURCE DEVELOPMENT PROJECT

QUARTERLY REPORT

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Advanced Science & Partnerships for Integrated Resource Development

QUARTERLY REPORT

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List of Acronyms

ASPIRED	Advanced Science and Partnerships for Integrated Resource Development
ATTC	Aquaculture Technology Transfer Center
AAB	Ararat Artesian Basin
BMO	Basin Management Organization
COR	Contracts Officer's Representative
COVID-19	Corona Virus Disease 2019
CJSC	Closed Joint Stock Company
CSR	Corporate Social Responsibility
DPLC	Department of Licenses, Permits and Compliances
DSS	Decision Support System
EE/RE	Energy Efficiency/Renewable Energy
EMIC	Environmental Monitoring and Information Center SNCO
EMMP	Environmental Mitigation and Monitoring Plan
ERGIS	Environmental Research and Geographic Information Systems
EU	European Union
FAR	Fund for Armenian Relief
F2F	Farmer to Farmer Project
GIS	Geographic Information System
GOA	Government of Armenia
HAAF	Hayastan All-Armenian Foundation
HMC	Hydrometeorology and Monitoring Center
HPP	Hydropower plant
ICARE	International Center for Agribusiness Research and Education
IR	Intermediate Result
ITF	Interagency Task Force
LOP	Life of Project
ME&A	ME&A, Inc.
ME	Ministry of Environment
PMP	Performance Management Plan
PURE-Water	Participatory Utilization and Resource Efficiency of Water
PV	Photovoltaic
SCADA	Supervisory Control and Data Acquisition
SEDF	Sustainable Energy Development Fund
SoE	State of Emergency
SWCIS	State Water Cadaster Information System
RA	The Republic of Armenia
3D	Three-dimensional
TO	Task Order
USAID	United States Agency for International Development
WRMA	Water Resources Management Agency
WUA	Water Users Association
WUP	Water Use Permit

1. Executive Summary

This report describes the programmatic activities implemented by the Advanced Science and Partnerships for Integrated Resource Development (ASPIRED) project during the fourth quarter of Year 5 of the project, from July 1 through September 31, 2020. The report reviews progress and achievements in each of the project areas during the reporting period, as well as planned activities for the next quarter. The report highlights issues and problems, along with actions taken to address these challenges.

The State of Emergency (SoE) declared by the Government of Armenia (GOA) on March 16 has been extended for the fifth time during the reporting period. These SoE extensions have been for a period of 30 days each time in response to continuing challenges related to the COVID-19 global outbreak.

ASPIRED developed a Mitigation Plan to minimize potential disruptions to project implementation during the SoE, including all staff continuing to work from home as of March 18. The Mitigation Plan has allowed the ASPIRED team to continue internal and external communications with USAID, ME&A home office, government counterparts, partners, stakeholders, and beneficiaries using online platforms, virtual meetings, and site visits. On September 12, the GOA declared quarantine until January 14, 2021. This regime allows going back to the office operations in phases, taking all safety measures, rules and guidelines issued by the GOA, Armenia's National Center for Decease Control and World Health Organization. ASPIRED team developed an office re-opening plan, including a schedule for employees to work in shifts and resumes office operations in accordance with the plan in mid-September.

1.2 ASPIRED Project Summary

On September 29, 2015, the United States Agency for International Development (USAID) awarded ME&A Inc. (ME&A) a Task Order to implement the ASPIRED project under the Water and Development IDIQ. The purpose of the ASPIRED project is to support sustainable water resource management and sustainable practices of water users in the Ararat Valley using science, technology, innovation, and partnership initiatives. The ultimate goal is to reduce the rate of groundwater extraction in the Ararat Valley to sustainable levels.

To this end, the ASPIRED project focuses on several critical areas:

1. Water Resources Data
2. Low Cost and Water Efficiency Technologies
3. Water Regulation and Enforcement
4. Coordination across stakeholders

The ASPIRED project places a strong emphasis on building partnerships with the public and private sectors, research organizations, and international donors to pilot innovative water and energy efficiency technologies, and to promote better water resource monitoring, planning and sustainable management.

During the last quarter, in response to USAID request for a cost proposal for an extension to the ASPIRED Task Order, ME&A submitted the cost proposal with budget to USAID. On July 14, 2020, the ASPIRED project received a Modification to the Task Order from USAID for a total amount of $600,000 and 10-months extension for the period of performance from September 28, 2020 to July 26, 2021.

Under this extension, the ASPIRED project will continue to provide technical assistance to the GOA in the same focus areas as stated above.

1.3 Main Highlights from the Reporting Period

- **Water Resources Data**

On August 28, the ASPIRED project jointly with the Ministry of Environment (ME), conducted the first session of the ME's Working Group (WG), which was previously postponed due to COVID-19. The project received WG members feedback on its draft deliverable on water balance, and water supply and demand balance in the Ararat Valley, on the draft of the Ararat Valley Atlas, for finalizing both deliverables.

ASPIRED team completed calibration of the complex steady steady-state groundwater flow model of the Ararat Valley groundwater basin in GMS/MODFLOW. The model allows estimating the effects of groundwater abstraction on the levels of groundwater in the basin and its different zones, thus serving as a tool to generate data for informed decision-making on groundwater allocation for use in the Ararat Valley.

ASPIRED project completed the English version of first Draft of the Ararat Valley Atlas, including 56 thematic maps, and submitted it to USAID and ME for their review before finalization.

- **Low Cost and Water Efficiency Technologies**

ASPIRED team discussed and agreed with the beneficiaries and designers on three new projects: Sardarapat water supply, Mrgashat well optimization and Hovtashat well optimization. As of late September, communities received the final drafts of engineering designs for all three projects for further submission for approval.

- **Water Regulation and Enforcement**

The Working Group (WG), comprised of the ASPIRED project experts on hydrobiology, hydrochemistry and hydromorphology completed data collection, including field measurements, and data analysis for the selected sections of the Akhuryan River to validate the replicability of the method for assessment of self-purification capacity of rivers in Armenia.

- **Stakeholder Coordination and Communication**

On July 30, the ASPIRED team organized a virtual opening for the Yeghegnut drinking water project. USAID/Armenia Mission Director Debora Grieser, USAID/Caucasus Regional Contracting and Agreement Officer Deborah Perlman, Armavir Governor Hambardzum Matevosyan, representatives of Yeghegnut Municipality, USAID ASPIRED and PURE-Water Projects, as well as key partners attended the event. The event livestream video and post event coverage were posted on the Project FB page; USAID/Armenia also shared the information on its FB page.

On September 11, the ASPIRED team also conducted an online opening event for the Pokr Vedi irrigation improvement project, which included a film exhibition and opening remarks by USAID Mission Director, Ararat region Governor, and President of Armenia Fund. Post completion material was posted in ME&A's FB page in two languages.

On September 25, the ASPIRED team submitted the project Year 6 work plan to USAID for approval.

2. Summary of Performance Indicators

The Table below summarizes performance indicators for the reporting period.

Table 1: Summary of performance indicators – Quarter 4 of FY 2020, Year 5

	Indicator[1]	Year 5 Target/ Actual	Q 4 Year 5 Actual	LOP Target/ Actual	Notes: Descriptions/Comments/Assumptions
IR 1: Establish a comprehensive, user-friendly, open data system that is accessible to all stakeholders.					
Sub-IR 1.1: Ararat Valley Geocoded, real-time, publicly accessible data system that incorporates water resource, groundwater, and hydrological datasets from multiple stakeholders built and shared with the GOA					
Indicators					
1.1.1	Percent of total datasets for the Ararat Valley publicly accessible	30/0	0	80/50	This indicator refers to the datasets related to the water resources in the Ararat Valley which will be accessible for the general public. 80% of all datasets on the Ararat Valley will be made publicly available, which accounts for 100% of all the data that can be available to the public according to the Armenian legislation. This indicator was delayed due to COVID-19, which caused lockdown of the ASPIRED project and government institutions. ASPIRED plans to meet this indicator by the end of the first quarter of Year 6 with the following data: - Data on groundwater flow model of the Ararat Valley; - Datasets of the DSS for the Ararat Valley; - Datasets of the online monitoring of groundwater use in the Ararat Valley; - Geodatabase on the Ararat Valley; - SWCIS online; and - Ararat Valley Atlas published and online.
1.1.2	Percent of total wells mapped in the Ararat Valley	N/A	N/A	100/100%	Completed in Year 2.

[1] Indicators are presented on a cumulative basis. Non-cumulative indicators are marked separately.

1.1.3	Number of stakeholders engaged in the data collection activities	N/A	-	16/16[2]	This indicator refers to the number of stakeholders engaged in the groundwater-related data collection activities in the Ararat Valley from different sectors – government, private, and public. ASPIRED met planned targets for this indicator in Year 4.
Sub-IR 1.2: An online tool for hydrogeological modeling and decision-support for the Ararat Valley that incorporates hydrologic, economic, energy, social equity and environmental data generated					
Indicators					
1.2.1	GIS-based decision support tools for Ararat Valley developed	2/2	1	2/2	ASPIRED completed the DSS and 3-dimensional model for the Ararat Valley in Year 4. The Groundwater flow model for the Ararat Valley was completed in Q4 of Year 5.
Sub-IR 1.3: A publicly accessible system that maximizes the use of open source technology and produces reports based on high-quality, real-time monitoring data created					
Indicators					
1.3.1	Number of fisheries with automatic data system installed	N/A	N/A	4/4	This indicator was dropped based on Year 5 approved Work Plan.
Sub-IR 1.4: Plan for decentralized, sustainable data collection methods to monitor groundwater resources and strengthened implementation capacities of partners developed in partnership with the Government of Armenia (GOA) and local stakeholders					
Indicators					
1.4.1	Percent of total coverage of the groundwater extraction points monitored	18.2/44.2	44.2	50/76	This indicator refers to the percentage of groundwater extraction wells monitored by the online automated system that the ASPIRED project installed versus the total number of 336 operational groundwater wells available in the fisheries. The cumulative results for Year 5 refer to the systems installed by the ASPIRED project (on 19 groundwater wells), and 238 wells monitored by Hydrometeorology and Monitoring Center (HMC-former EMIC) with the equipment provided by the ASPIRED.
IR 2: Introduce locally appropriate, cost effective technologies to improve water resource management					
Sub-IR 2.1: Technologies developed, piloted, and evaluated at different-sized fish farms with the objective of improving water resources management					
Indicators					

[2] ME with its 2 subdivisions, PEER grantee, Institute of Water Problems, USGS, EU Water Initiatives Project, Ministry of Agriculture, State Hydromet Service, Scientific Center of Zoology and Hydro ecology, Metsamor power plant which are/were involved in the data collection process, fisheries: Alex Grig, Interaqua, Golden Fish, Max Fish, State Hydromet Service, the Center of Zoology and Hydroecology, Water Committee.

2.1.1	Number of groundwater extraction reduction technologies piloted and evaluated	2/1	1	8/7[3]	This indicator refers to technologies introduced at fish farms or other water use points that contribute to the reduction of groundwater extraction by users. This indicator also provides information on annual water saved, measured in cubic meters, for the indicator 2.1.2. The Year 5 results refer to efficient pumping technology in Vedi and irrigation project in Pokr Vedi. The ASPIRED project completed installation of the system in Vedi, which was operated by the local municipality. Installation of solar system was postponed to Year 6 due to issues caused by COVID-19 pandemic.
2.1.2	Thousands of cubic meters of water saved annually in Ararat Valley	11,412/8,912	27	11,412/25,270[4]	This indicator measures the amount of water savings from the application of innovative water saving technologies, introduced by ASPIRED, at fish farms and other water use points. It also accounts for the implementation of water rehabilitation projects in the communities of the Ararat Artesian Basin (AAB) affected by the shortage of groundwater resource in collaboration with participatory Utilization and Resource Efficiency of Water (PURE-Water) Project. Actual results for Year 5 include recurrent savings provided by completed projects, and results of the drinking water project in Yeghegnut, Khachpar, Pokr Vedi and Vedi. Q4 data refers to the water savings from Vedi project.
Sub-IR 2.2: Technologies with the objective of increasing energy efficiency and/or renewable energy generation of water users developed, piloted, and evaluated					
Indicators					
2.2.1	Number of energy efficiency and/or renewable energy (EE/RE) technologies piloted and evaluated	2/1	0	3/2	This indicator refers to water-use related EE/RE technologies to be piloted during the project. LOP target refers to efficient pumping in Aratashen, Yeghegnut and solar project in Vedi. Year 5 projections include efficient pumping in Yeghegnut and solar projects in Vedi. The drop in the actual results is caused by the delay in installation of solar system in Vedi, which was postponed to Year 6 due to issues caused by COVID-19 pandemic.
2.2.2	Megawatt hour of energy saved annually	796[5]/733	47	796/1009[6]	This indicator refers to the kilowatt-hour energy savings generated due to more efficient use of energy. Recurrent savings generated by completed projects are counted in the subsequent years and will be reported on an annual basis upon completion of the programmatic year. Year 5 actual results include recurrent savings

[3] The data refers to the Water Reuse Projects in Hayanist and Sayat-Nova communities, Well Sealing (with motor pumping) and Well Optimization technologies in Sipanik village, Well Sealing Project with (electric pumping or drift irrigation) in Hovtashat, Drinking Water Project (efficient pumping combined with metering) in Aratashen, and Irrigation Project in Pokr Vedi community.

[4] The first figure of the cell refers to the cumulative cubic meters of water to be saved as a result of the ASPIRED Pilot Projects by the end of year 5, which is also the LOP, while the second figure refers to the actual cumulative cubic meters of water saved as a result of ASPIRED pilot projects to-date.

[5] Year 5 targets consider recurrent savings from Hayanist and Aratashen projects, plus savings expected from projects scheduled for completion during Year 5: ATTC, Yeghegnut, Vedi and Pokr Vedi.

[6] LOP data refers to Hayanist project during 4 years of operation (24 MWh/year, Aratashen project (204 MWh) completed in Year 4, as well as Yeghegnut (116 MWh), Pokr Vedi (342 MWh) and Vedi (47 MWh) Projects completed in Year 5.

					from past projects as well as savings generated by Yeghegnut, Vedi and Pokr Vedi projects. Q4 data refers to the project in Vedi.
2.2.3	Clean energy generated annually, MWh	33/0	0	33/0	This indicator refers to the clean energy generation capacity resulting from the introduction of RE technologies aimed at minimizing extraction of the groundwater. The expected result was to be provided by the Urban Irrigation project in Vedi. However, the installation of the solar system was postponed to Year 6 because of issues caused by COVID-19 pandemic
2.2.4	Gains in the reduction of GHG emissions as a result of USG assistance, in metric tons	2,227,2[7]/2,197	35	2,227.2/3,452[8]	GHG emissions reduction-related data will be calculated in metric tons/year based on the kilowatt-hours of savings resulting from application of energy saving technologies by the factor of 0.473 t CO2 per megawatt-hour of energy. In addition to the GHG emission reduction occurring from the energy savings, ASPIRED also accounted for the CO2 reductions from the irrigated farmlands. Year 5 actual results refer to the past projects as well as projects in Pokr Vedi, Khachpar and Vedi project completed during Year 5. The Q4 data refers to Vedi project.
2.2.5	Number of people receiving improved service quality from an existing basic or safely managed water service as a result of USG assistance.	22,144[9]/22/144	14,800	26,615/26,615[10]	Qualitative improvements[11] of water resource resulting from the infrastructure projects implemented by ASPIRED project. The term "water users" refers to households, local farmers, and other groups benefitting from these improvements (gender disaggregated). Q4 data refers to the urban irrigation project in Vedi.
	Men	10,127	7,000	12,007	
	Women	12,017	7,800	14,608	
2.2.6	Number of water users experiencing improved efficiency of water resources	5/6	3	12/13[12]	This indicator tracks the communities/individuals that are benefitting from improved efficiency in use of water, resulting from the pilot projects implemented under the ASPIRED project. Examples of such projects can potentially reduce water abstraction by fish farms due to new technologies installed. Year 5 projections refer to pending projects in Yeghegnut, Vedi, Pokr Vedi, Khachpar and ATTC. Q4 results refer to Vedi

[7] Year 5 targets include recurrent savings from completed projects as well as projects planned for completion during Year 5 (Yeghegnut, Khachpar, Vedi, Pokr Vedi).

[8] LOP actual data refers to the recurrent savings provided by completed projects during the entire period of their performance (starting from their launch date) and projects completed during Year 5.

[9] Year 5 target includes projects planned for completion in Year 5: Drinking Water Project in Yeghegnut; and Irrigation Projects in Vedi, Pokr Vedi, and Khachpar communities.

[10] The LOP data refers to the beneficiaries of the two Water Reuse Projects in Hayanist and Sayat-Nova, the Well Optimization Projects in Sipanik and Hovtashat, the Drinking Water projects in Aratashen and Yeghegnut, Irrigation Projects in Pokr Vedi, Vedi and Khachpar.

[11] ASPIRED will conduct pre- and post-implementation water tests to detect the qualitative changes in water.

[12] The results refer to Vedi, Pokr Vedi, Artashat WUA, Khachpar, Yerevan WUA, Yeghegnut, Aratashen, Hovtashat, Sipanik communities, water reuse projects in Hayanist and Sayat-Nova communities ((a) two communities avoided drilling of wells for irrigation needs; (b) two fisheries, Samvel Lablajyan's fish farm and Masis Dzuk fishery, became more efficient water users),

					municipality as the water user, as well as Yerevan and Artashat Water Users Associations (WUAs).
Sub-IR 2.3: Based on the pilot process and available research, recommendations developed for successful water and energy technologies for policymakers and stakeholders shared					
Indicators					
2.3.1	Number of successful technologies recommended and shared with the stakeholders and policymakers	3[13]/2	1	10/9[14]	ASPIRED will pilot at least six technologies by the end of the Project, conduct an evaluation, and provide recommendations during Year 5 of the project. The data for Q4 refers to the irrigation project in Khachpar.
Sub-IR 2.4: Technology or method to permanently close illegal and/or abandoned wells, developed, piloted, and evaluated					
Indicators					
2.4.1	Number of piloted technologies to permanently close illegal or abandoned wells	0/0	0	3/3	ASPIRED project piloted one well sealing technology in Sipanik and two well optimization technologies in Sipanik and Hovtashat communities.
IR 3: Introduce new policies and regulations to improve integrated water resource management.					
Sub-IR 3.1: Trainings to build groundwater monitoring capabilities, capacity strengthening, and knowledge of how to use equipment; and follow-up assessments to test knowledge on groundwater monitoring and analysis of the basin management organizations (BMOs) and relevant water management agency officials to improve enforcement					
Indicators					
3.1.1	Number of trainings for building capacity of ME in groundwater monitoring	4/1[i]	0	9/6	This indicator refers to trainings on the enhanced up-to-date State Water Cadaster Information System and Management Information System (MIS) for the Ararat Valley and on enhanced transparent water use permitting, control, oversight systems and decision support tools. However, this deliverable was partially fulfilled due to the lockdown of the ASPIRED office and Government institutions, and inability to conduct formal trainings. The trainings on the use of the DSS and other tools developed by the project will be conducted in Year 6 after the situation with COVID-19 infection improves.

[13] Planned targets for Year 5 refer to ATTC, Vedi and Pokr Vedi Projects.

[14] Aeration technology piloted in Masis Dzuk fish-farm; Water Reuse Projects in Hayanist and Sayat-Nova communities; Sipanik Well Sealing Project; Sipanik Well Optimization Project, Water Project in Aratashen (efficient pumping/billing & metering), Hovtashat Well Optimization Project, Irrigation Projects in Pokr Vedi and Khachpar.

3.1.2	Number of people educated on tools, approaches, and/or methods for water security, integrated water resource management, water source protection and sustainable water use as a result of USG assistance (not cumulative)	10/4[15]	0	126/119	This indicator refers to trainings on enhanced up to date SWCIS and MIS for the Ararat Valley; enhanced transparent water use permitting, control, and oversight systems; and environmental compliance procedures and efficient water use trainings for the beneficiaries of the communities. This indicator is not cumulative and is reported on a quarterly basis. The actual for Year 5 refers to the on-the-job training to ME specialists on the generation of reports from the SWCIS, training to the water service operator in Yeghegnut.
	Women	1	0	31	
	Men	3	0	88	
Sub-IR 3.2: Rigorous, evidence-based analysis of optimal water fee levels completed, shared with engaged stakeholders and recommendations provided to the GOA					
Indicators					
3.2.1	Number of workshops and consultations with stakeholders to discuss water fee levels	N/A	N/A	9/9	The target for this indicator was met during Year 2 /Quarter 2; therefore, ASPIRED has completed data collection under this indicator for the project.
Sub-IR 3.3: Water permitting monitoring and enforcement measures assessed and publicly available and recommendations, including development of regulations, provided to the GOA.					
Indicators					
3.3.1	Package of recommendations to address water permitting monitoring and enforcement measures provided to GOA	1[16]/0	0	4/3[17]	This indicator refers to the package of recommendations that ASPIRED drafted and submitted to the GOA. In Q4, the ASPIRED team planned to submit the Draft Government decree/resolution on the adopting the method of assessing self-purification capacity of rivers. However, this deliverable was delayed to Year 6 due to the lockdown of the ASPIRED office and Government institutions and inability to conduct trips. The ASPIRED will submit the deliverable in December 2020.
IR 4: Ensure communications and coordination with stakeholders to avoid duplication of efforts					
Sub-IR: 4.1: Systems-mapping to gain and apply knowledge of points of influence, incentives, and resources of stakeholders in water and the water-energy nexus completed and shared					
Indicators					

[15] Y5 actual result refers to the water service training conducted by the ASPIRED project engineer in Yeghegnut in December 2019.

[16] Planned submission of the Draft Government decree/resolution on the adoption of the method for assessing self-purification capacity of rivers in Year 5.

[17] (1) The ASPIRED team opinion on Program of Measures in National Water code to USAID; (2) the Strategy for Policy and Regulatory Improvements and a Road Map for Improved Participatory Management of Water Resources developed under the USAID's PURE Project; (3) the draft Government decree on establishment of the requirements for the protection of water resources in the recreational zones submitted to the ME.

4.1.1	Number of international and local organizations participating in the system mapping activities	1/2	2	26/27	This indicator refers to newly identified stakeholders and points of influence in water and water-energy nexus for the ASPIRED project. The result refers to the collaboration with Yerevan and Artashat WUAs.
4.1.2	Number of partnerships made by ASPIRED with other organizations	1/3	1	19/21[18]	This indicator refers to partnerships, collaboration with other public and private sector organizations, donors for the implementation of joint projects and/or other initiatives contributing to the accomplishment of ASPIRED objectives. The data refers to the partnership with Khachpar community.
Sub-IR 4.2: A transformative partnerships model to respond to needs for research, pilots, analysis, and other coordinated efforts that is demand-driven, flexible, and has a plan for financial sustainability created					
Indicators					
4.2.1	Percent of total funding leveraged from stakeholders for water resources management activities. (not cumulative)	35/40	0	35/34[19]	This indicator refers to the total in-kind and financial contribution by ASPIRED partners versus the total contribution of the ASPIRED project for a given year. Targets are not cumulative and refer to a specific year of the project cycle. For Year 5 target, ASPIRED will count the cost-share contribution of the communities of Yeghegnut, Pokr Vedi, Vedi, and Khachpar. The actual for Y5 (40%) refers to the cost shares provided for Yeghegnut, Pokr Vedi, and Khachpar Projects. Vedi Municipality delayed installation of the solar system to Year 6 due to the emergency situation in the country and the need to address COVID-19 pandemic consequences.
IR 5: Portfolio-level indicators					
5.1	Percent of population living in targeted areas with improved water management	52/57	25.3	52/57[20]	The geographical target area is the Ararat Artesian Basin (AAB), a territory of 13,075 hectares with a population of 58,373 people (28,392 men; 30,345 women). The results will count the population of affected communities who benefitted from the projects completed both during the previous years and in Year 5. Q4 result refers to the population of the community of Vedi.
	Women	28/31.3	13.3	28/31.3	
	Men	24/25.7	12	24/25.7	
5.2	Number of key implementation steps taken to improve water management in the Ararat Valley	2/3	2	12/12[21]	This indicator refers to policy, analysis, and other activities targeted towards improvement of water data-related activities, including training and pilot projects.

[18] ASPIRED's partnerships with Hayanist community, Samvel Lablajyan LLC, UNDP/GEF SGP, ERGIS NGO, CCHBCA, Satagro, Armavir Farmer LLC(ATTC), SME DNC, FAR, Sayat-Nova community, Sipanik, SEDF, Aratashen, Hovtashat, Vedi, F2F, AAF, UNDP/Climate Change Program, the community of Yeghegnut, Artashat WUA and the community of Khachpar.

[19] This figure represents the actual cost-share provided by the communities and partners in relation to the total cost of all the projects completed by the ASPIRED project for the entire project period.

[20] The results refer to the population size of Sipanik, Hayanist, Sayat-Nova, Aratashen, Hovtashat, Yeghegnut, Pokr Vedi and Khachpar communities versus the total size of the population in the AAB.

[21] This figure refers to: (1) Inventory of the Groundwater wells, natural springs and fisheries of the Ararat Valley (2) The Report presented to the GOA - Achieving Sustainable Groundwater Use in the Ararat Valley: the Role of the Fisheries Sector; (3) ASPIRED was involved into the Interagency Task Force (ITF) established by the Prime-Minister's assignment in January-February 2017. (4) Pilot projects (5) Installation of the automated online groundwater use monitoring system in the fisheries of the Ararat Valley; and (6) DSS with its hydrologic, climate change and water quality assessment models; (7) 3D model of the Ararat Valley groundwater basin; (8)

5.3	Number of private sector firms that have improved management practices or technologies as a result of USG assistance	2/2	2	9/9[22]	This indicator refers to (a) the number of fisheries with automated groundwater use monitoring systems installed; and (b) fisheries which have adopted innovative water or energy efficiency (including renewable) technologies. During the reporting period, the ASPIRED provided consultation to Golden Fish fishery near Ranchpar community on the secondary use of fish farm water for irrigation and Asatur Muradyan's fishery near Gay community on the installation of the recirculation system
5.4	Number of innovations supported through USG assistance	2/0	0	7/5[23]	This indicator refers to innovative technologies, management/monitoring tools or practices introduced by the ASPIRED team in fish farms, at water use points and/or communities of the Ararat Valley which contribute to the reduction of the groundwater use. The drop in the indicator is explained by the delay in completion of Vedi and ATTC projects, in which ASPIRED completed its part of the commitments. These projects will be completed in Year 6.
5.5	Number of innovations supported through USG assistance with demonstrated uptake by private and/or public sector firms	1/1[24]	0	5/5[25]	This indicator refers to the uptake/replication by the public and/or private sectors of projects, technologies, innovations and/or practices introduced by the ASPIRED project at fish farms, water use points, and/or communities of the Ararat Valley.

Capacity building activities,(9) Billing and metering system introduced in the communities with drinking water projects; (10) Preparation of legal package for adoption of the requirements for the water resources in recreational zones of Armenia , (11) Ararat Valley Atlas (12).SWCIS.

[22] The LOP result includes seven fisheries with improved water management practices: four have been equipped with online monitoring systems and three fish-farms participate in the infrastructure projects – ATTC and water reuse for irrigation (Lablajyan and Masis Dzuk).

[23] The data refers to the (1) practice of the secondary use of outlet water from fisheries for irrigation purposes, which has never been practiced at a community scale; (2) well sealing/optimization activities; (3) installation of the online monitoring system in the fisheries; (4) use of inverter pumping technology in Aratashen; (5) decision support tools developed by the ASPIRED project

[24] The actual result refers to the project on extension of the irrigation network in Sayat-Nova community with grant funding of the Japanese Embassy in Armenia

[25] (1) Replication of the water reuse project in Hovtashat community (with assistance from ERGIS NGO) and (2) Sayat-Nova community, (3) secondary use of Masis Dzuk outlet water for fish-breeding, (4) extension of the drinking water network in Aratashen by the community's resources, (5) grant provided by the Japanese Embassy to ERGIS for the extension of the irrigation network in Sayat-Nova community and installation of a PV system on the pumping station.

3. Program Implementation

3.1 Water Resources Data

SWCIS Enhancement

During the reporting period, the ASPIRED project continued providing online coaching sessions to the selected personnel of the new Division on Cadasters and State Registers of Department of Licenses, Permits and Compliances (DPLC) of the ME on developing queries for generating the desired reports in the SWCIS Data Warehouse. In particular, the specialists focused on preparing datasets on permitted volumes of surface water and groundwater abstraction in Ararat Valley for 2016 and 2019. These datasets were used by the ASPIRED team for preparing revisions and updates in the draft Ararat Valley Atlas, as it was recommended by the ME after the review of the draft version of the Ararat Valley Atlas in the previous quarter.

In August-September, ASPIRED team conducted a series of online discussions with the acting head of the ME's DLPC on full operation of the SWCIS Data Warehouse. ASPIRED team presented advantages of online operation and maintenance of the Data Warehouse for timely sharing of data between the participating agencies and public, as well as project's recommendations for making the enhanced SWCIS Data Warehouse online. Participants identified further tasks to be implemented by the ME and ASPIRED for online operation and maintenance of the data warehouse, including the following:

- Ministry's decision on a website where the SWCIS Data Warehouse could be uploaded for online operation and maintenance.
- Ministry's decision on levels of authorization to be granted to various stakeholder institutions, including within the ME, and the public for online use of data from the SWCIS Data Warehouse.
- Security requirements for hardware and software. Based on these requirements, ASPIRED will enhance the SWCIS Data Warehouse software security.

ME requested the ASPIRED project to further upgrade the SWCIS Data Warehouse to accommodate recent structural changes in the Ministry and create linkages between the Data Warehouse and existing water-related datasets on bioresources, waste and atmospheric air. The Ministry also requested ASPIRED project to assist with re-coding an online portal for submission of applications for water use permits (WUP) and respective online operations. The portal was developed with assistance of USAID's PURE-Water (PURE-Water project completed in July 2020).

The ASPIRED team and ME agreed on several tasks to be completed by the Ministry, which will serve as basis for the ASPIRED project to help the Ministry with the two requests. The tasks include: (a) drafting a concept of the environmental cadaster of the ME, based on review of the legal requirements for various components of the cadaster on atmospheric air, waste and biodiversity; (b) determining a web-server for operationalization of the online portal for submission of applications for WUPs, determining website requirements and software security. ASPIRED project expects receiving these documents during the next quarter, and will continue discussion with the ME on specific tasks to be additionally implemented by the ASPIRED project on further upgrading of the SWCIS Data Warehouse and operationalization of the online portal for WUP applications.

Decision Support Tools

During the reporting quarter, the ASPIRED team completed the last phase of calibration of the steady-state complex groundwater flow model for Ararat Valley groundwater basin in GMS/MODFLOW. With guidance

provided by Todd Wood, Aquaveo expert, project specialists verified data on groundwater abstraction by wells, values of hydraulic conductivity assigned to the three water bearing units of the basin, and diagnosed the model by comparing the outputs of the model with the hydraulic heads measured in the monitoring wells. ASPIRED project completed calibration of the model in early September, using manual and parameter estimation (PEST) calibration tools.

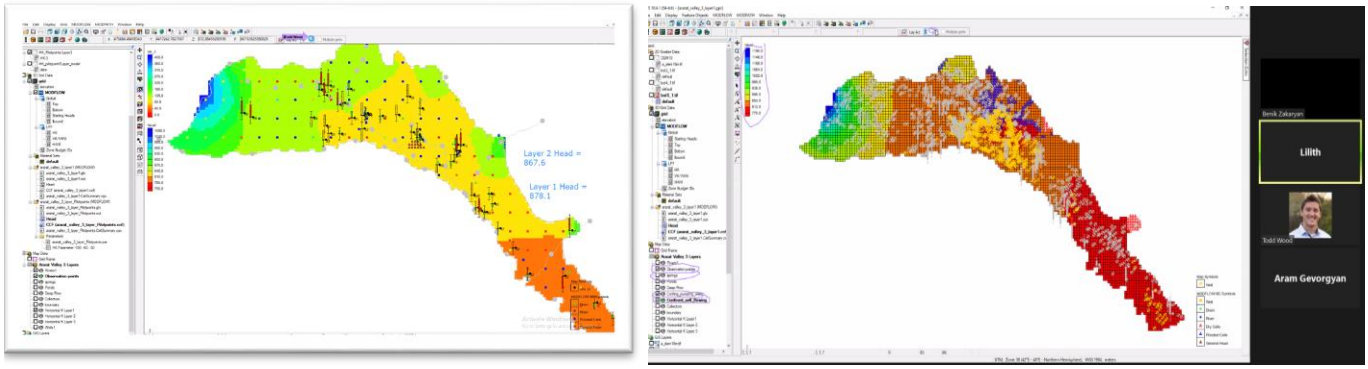

Figure 1: Comparing the outputs of the groundwater flow model with the hydraulic heads in the monitoring wells

After completing the calibration, ASPIRED started utilizing the model for analysis of various scenarios of groundwater management in Ararat Valley. The model allows estimating the effects of the reduced volumes of groundwater abstraction on the groundwater levels in different zones of the valley, as well as analyzing both for the groundwater basin, and separate basin management areas that are a part of Ararat Valley. The project will complete different scenarios analysis during the next quarter and present the findings and recommendations in the project deliverable on *Water balance, and water supply and demand balance in the Ararat Valley* that assesses the hydrologic and hydrogeologic conditions of the area.

In the quarter reported, the ASPIRED team prepared a User Manual on groundwater modeling, describing the use of ArcHydro Groundwater tools (AHGW) for developing a three-dimensional model of the hydrogeologic structure of the Ararat groundwater basin, making various calculations using available data. Additionally, ASPIRED will complete another manual describing the steps for constructing a steady-state groundwater flow model using GMS/MODFLOW tools. Both manuals will be used during the capacity building program for the technical personnel of the ME on groundwater modeling.

ASPIRED Deliverable on Water Balance, and Water Supply and Demand Balance in the Ararat Valley

In July, the ASPIRED project collaborated with the ME on receiving further clarifications on selected comments and recommendations from the members of a Working Group established by the ME[26] on its deliverable *Water balance, and water supply and demand balance in the Ararat Valley*. The project requested the WG secretary, representing the DLPC of the ME, to organize a discussion (in-person or online) with the representatives of academia Institute of Geophysics and Engineering Seismology after A. Nazarov, to refine their comments on the ASPIRED deliverable provided on March 30, 2020. ASPIRED also requested

[26] *Established on January 30, 2020 by the order of the Minister of Environment, the WG involves representatives from the ME, including Departments* of Licenses, Permits and Compliances; *Water Policy; and Hydrometeorology and Monitoring Center. As well, the WB Members include Water Committee of the Ministry of Territorial Administration and Infrastructure; Institute of Geological Sciences; and Institute of Geophysics and Engineering Seismology after A. Nazarov; USAID-Armenia and ASPIRED project representatives. The role of the WG is to ensure effective implementation of tasks and planned results within projects supported by international donor organizations in Armenia's water sector, such as USAID.*

to organize a first session with the WG members to present the project deliverable on *Water balance, and water supply and demand balance in the Ararat Valley* and discuss with the WG members management scenarios as presented in Chapter 9 of the deliverable report.

In August, ASPIRED project worked with the ME on organizing the first session with the ME's WG, which was initially postponed due to COVID-19. The session took place on August 28, in Marriott Armenia Hotel, to discuss the ASPIRED project preliminary findings on hydrologic and hydrogeologic conditions in Ararat Valley, and reviewed draft of the Ararat Valley Atlas.

Figure 2: Presentations and discussions

ASPIRED presented its preliminary findings on water balance, water supply and demand balance for the Ararat Valley, calculated values of groundwater reserves, natural groundwater resources recharging the Ararat groundwater basin and sustainable volume of groundwater abstraction. ASPIRED team also presented a compendium of comments and recommendations received from the stakeholders on its deliverable reports, and how the project incorporated those in the work.

Participants discussed the ASPIRED findings on hydrologic and hydrogeologic conditions in the Ararat Valley, including methodology and analytic tools used in the work and gave further advice for refining the deliverable before presenting it to the Government and other stakeholders. On September 28, the Secretary of the ME's WG informed the ASPIRED project that the WG members had no further comments on the presented findings on the hydrologic and hydrogeologic conditions in Ararat Valley. She also asked the project to analyze the water management scenarios and conclude the deliverable on Ararat Valley for the final presentation to the stakeholders. ASPIRED team will work closely with the ME in analyzing the scenarios for effective management of water resources in the Ararat Valley during the next quarter.

Introduction of the automated online system for groundwater use monitoring

In July, the ASPIRED team received a request from the ME to assist them in the process of application for a calibration certificate from the National Institute of Standards of Armenia for a set of flow meters and data loggers that were installed with the project assistance in Interaqua fishery. ASPIRED provided the necessary guidance to the ME and the fishery on the process for receiving this certificate. The ME will use the certificates for sealing the flow meters of the fishery.

In August, ASPIRED project discussed with the acting head of the DLPC of the ME the recommended mechanisms for hand-over of the installed flow meters and data loggers to the ME, having as basis the methods that have been applied by the EU supported Water Initiative Project. DLPC's acting head will discuss the mechanisms with the legal department of the ME and collaborate with the project on the transfer of the installed equipment.

Ararat Valley Atlas

During the reporting quarter, the project team continued close collaboration with the personnel of the ME on updating selected maps of the draft Ararat Valley, following Ministry's recommendations provided in June. ASPIRED and ME specialists worked on finalizing the following datasets:

- Permitted volumes of water use in the Ararat Valley from 2016 and 2019;
- Groundwater monitoring in the national monitoring network; and
- Groundwater wells that were permanently and temporarily closed by the ME's initiative between 2014-2019.

ASPIRED presented the updated draft of Ararat Valley Atlas to the WG members during the session on August 28 and received a few recommendations on finalizing the selected maps of the draft.

In September, after a rigorous review of the English version of the Ararat Valley Atlas by the Home Office, ASPIRED submitted the draft Atlas to USAID Contracting Officer's Representative (COR) for review and feedback.

In the reporting period the ASPIRED team continued collaborating with the editorial team, technical team and USAID on finalizing the case study prepared by Carson+Co Global and Partners on Climate Risk Management by ASPIRED project. The team reviewed the draft article and suggested its revisions to the draft, before its preparation for final review by the USAID/Armenia Mission.

3.2 Low Cost and Water Efficiency Technologies

The Table 2 below summarizes the status of the pilot projects as of October 2020.

Table 2: Summary of pilot projects

Project Name/ Technology	Status	Total cost, USD	ASPIRED cost-share, USD	Partner cost-share, USD	Partner
Hayanist irrigation rehabilitation project	**Completed in April 2017**	131,706	89,525	27,212	Coca Cola HBC
				11,269	ERGIS
Sipanik well sealing project	**Completed in August 2017**	51,546	47,823	3,723	VALML LLC
Sipanik well optimization project	**Completed in September 2018**	24,554	22,002	2,552	Sipanik community
Sayat-Nova water reuse project	**Completed in September 2018**	132,100	80,409	20,876	Partnership for Rural Prosperity Project
				14,395	Fund for Armenian Relief
				16,420	Sayat-Nova community
Aratashen water supply project	**Completed in June 2019**	130,371	87,455	42,916	Aratashen community
Hovtashat well optimization project	**Completed in September 2019**	43,539	28,587	14,952	Hovtashat community
Yeghegnut water supply project	**Completed in February 2020**	120,809	79,777	41,032	Yeghegnut
Aquaculture Technology Transfer Center (ATTC) Project	**Ongoing** Dr. Stephen, a selected US aquaculture expert with extensive international experience, worked remotely on the verification of the ATTC project concept using materials, designs and photos provided by the ASPIRED project, since the planned trip to Armenia and the ATTC site were canceled due to COVID-19 pandemic. ASPIRED team conducted a virtual tour in the ATTC for Dr. Stephen to study the actual conditions of the site; check the water flow, airlift performance in the system and evaluate the operations of the greenhouse and biofilter. Dr. Stephen summarized all	178,028	114,542	63,486	Armavir Farmer LLC

	findings in a report, which confirmed that all components and technical approaches suggested by ASPIRED are valid, technically sound, and operational. The report recommended a few modifications to improve the system's efficiency. ASPIRED provided the report to the ATTC owner, along with the executive summary translated into Armenian. The COP conveyed the ATTC owner comments and questions to Dr. Stephen for further clarification of his recommendations. An online discussion between the ATTC owner and Dr. Stephen to finalize conclusions is planned during the next quarter. The registration of the ATTC facility at the Armenia's real estate cadaster was delayed due to the SoE restrictions and additional steps needed to complete issuance of the registration certificate by the real estate cadaster. After some restrictions of SoE were removed in May, including travel, ASPIRED organized a post completion/construction evaluation of the ATTC strengthened facility and lab, as requested by the Armavir department of State Urban Development Committee. ASPIRED project installed a fire prevention and security system in the ATTC, following a recommendation of the Armavir department of State Urban Development Committee. In June, the evaluation confirmed that it was compliant with the Armenian regulations and construction norms and standards. This evaluation was needed for the ATTC registration with the real estate cadaster. In August, the Armavir department of State Urban Development Committee issued a final completion act that will work as a basis for the final registration of the property at the real estate cadaster. ASPIRED handed over the completion act to the owner of the ATTC who will be responsible for registering the property and receiving the title deed. The ASPIRED lawyer prepared a draft Contract between ME&A and the to-be selected ATTC operator based on the requirements of the ASPIRED project; the Contract will be an attachment to the RFP for the third operator. In August, the owner of the ATTC verbally informed the ASPIRED team that he does not accept involving a third-party operator to provide assistance with start-up operation of the ATTC facility, despite his earlier agreement. At the time of preparing this report, ASPIRED and the ATTC owner decided to discuss, agree and implement Dr. Stephen's recommendation regarding modifications to be made in the facility. Upon agreeing on the modifications, the farm owner will give his final decision on operation of the ATTC – either with involvement of a third-part operator or with his participation. The team started preparatory work for disseminating new fish farm technologies and the results of the ATTC project among the interested fish-farmers. For this reason, the team met with Tigran Aleksanyan, the Deputy Head of Division of primary agricultural production of the Ministry of Economy and discussed the possibility of organizing an online dissemination event, including presentation of technologies implemented in the Armavir fish farm. ASPIRED is working on organizing the online dissemination event in November.				

Vedi urban irrigation project	**Ongoing** During the reporting period, Vedi Municipality identified more damages to water outlets caused by local vandalism, and during the monitoring visit to the project site in August, requested ASPIRED's assistance in eliminating the new damages. ASPIRED, jointly with the Municipality elaborated technical solutions for prompt elimination of the damages, and per COR approval, ASPIRED subcontracted the Yereky Mek Tegh LLC for implementing the technical solutions. The Municipality further postponed the installation of the Photovoltaic (PV) kit planned for the Project, due to financial restraints caused by the SoE.	147,538	59,632	87,906	Vedi Municipality
Irrigation upgrade in Pokr Vedi	**Completed in July 2020**	81,762	38,743	31,944	HAAF
				11,075	Artashat WUA
Irrigation upgrade in Khachpar	**Completed in May 2020** During the reporting quarter, ASPIRED completed installation of a three-dimensional pyramid shaped grid at the inlet of the irrigation network to simplify the maintenance of the system and increase water flow into the system. This additional measure is implemented to prevent trash which is dumped by local people in the canal entering the irrigation network.	93,478	60,005	33,473	Khachpar municipality
TOTAL		**1,135,431**	**708,500**	**426,931**	

Table 3: Summary of new pilot projects

Project Name/ Technology	Status	Total estimated cost, USD	ASPIRED cost-share, USD	Partner cost-share, USD	Partner
Sardarapat water supply project	**In preparation** The ASPIRED team worked with the Municipality and the Designer to assist with the design work, as well as followed-up with the Municipality on the process of acquiring a WUP for the target well. By the end of September, the draft engineering design was completed and handed over to the Municipality. The Municipality applied to the ME for the WUP, and permit issuance is pending.	376,360	122,410	253,950	Sardarapat community
Mrgashat well optimization project	**In preparation** The team worked with the Municipality and the Designer to assist with the design work, as well as followed-up with the Municipality and WUA on the process of acquiring a WUP for the target well.	26,329	22,279	4,049	Mrgashat community

	By the end of September, the draft engineering design was completed and handed over to the Municipality. The WUA applied to the ME for WUP, and the permit issuance is pending.				
Hovtashat well optimization project	**In preparation** ASPIRED received a commitment letter of the community. The team followed-up with the Municipality on the WUP for the target well; the community applied to the ME for a WUP for 50 wells that are owned by the community, and the permit issuance is pending.	13,815	12,330	1,485	Hovtashat community
Griboyedov well sealing and irrigation projects	**In preparation** Following the recommendation of the ME, the team assessed the opportunity of a well sealing project in Griboyedov Village of Armavir Marz. The Mayor agreed to the proposal of decommissioning the target well that was used by a couple of local farmers for irrigation, on condition that ASPIRED will assist the village with a broader irrigation efficiency project. After consulting the matter with the USAID COR, the team started developing project concepts (one for well sealing and the other for efficient irrigation). The team also agreed with the Mayor that the Community will make sure that the water use and other permits, required for the irrigation efficiency component, will be obtained in due time.	To be estimated			Griboyedov community

3.3 Water Regulation and Enforcement

Follow-up activities related to adoption of the Ministerial Decree "On Establishment of Requirements for Protection of Water Resources in Recreation Zones of Armenia."

The Ministerial Decree "On Establishment of Requirements for Protection of Water Resources in Recreation Zones of Armenia" is signed and published. It is available in the Armenian Legal Information Center (www.arlis.am) under N 335 governmental decree.

Development of the Method for Assessment of Self-Purification Capacity of Rivers in Armenia

During the reporting period, the ASPIRED expert group continued weekly meetings, discussing the progress achieved in development of the method for assessment of self-purification capacity of rivers from hydromorphological, hydrochemical and hydrobiological perspectives. The team ensured active engagement of the respective ministerial representatives, collecting their advice and guidance throughout the development process to ensure consistency of the developed method with the government priorities and needs.

On July 1, the ASPIRED experts conducted a trip to Akhuryan river basin, selected as an alternative site to test and validate the method for assessment of self-purification capacity of the river. The team recommended two river sections for the survey: the first section extends from Amasia to Gyumri and the second one from Gyumri to Akhuryan reservoir. The experts selected the first river section for testing purposes; Amasia and Marmarashen were identified as observation and sampling points and marked the corresponding geographic coordinates.

Figure 3 Amasia observation point on Akhuryan river

The HMC (former EMIC) provided the biological data for the Akhuryan River as per the ASPIRED request.

On July 21, the hydromorphologist conducted the second trip to Akhuryan river basin to collect morphological data, which along with the biological and chemical data were analyzed and used for the assessment of self-purification capacity of the Akhuryan River. Thus, all hydrological, chemical, and biological data are now available.

On August 7, the ASPIRED team held a meeting with Lilith Abrhamyan, head of Water Policy Department of the ME, to present the progress on development of method for assessment of self-purification capacity of rivers. The team also discussed the opportunities for future cooperation in legal areas. Mrs. Abrhamyan informed that the ME had sent a letter to the former USAID Mission Director, Deborah Grieser, requesting assistance from the ASPIRED project in legal areas.

The ASPIRED team conducted online interviews with the candidates for the Legal Expert position and selected Mesrop Manukyan to carry out the legal activities under this assignment. The ASPIRED team had a meeting with the Legal Expert to discuss the details of the task, planned activities and deliverables.

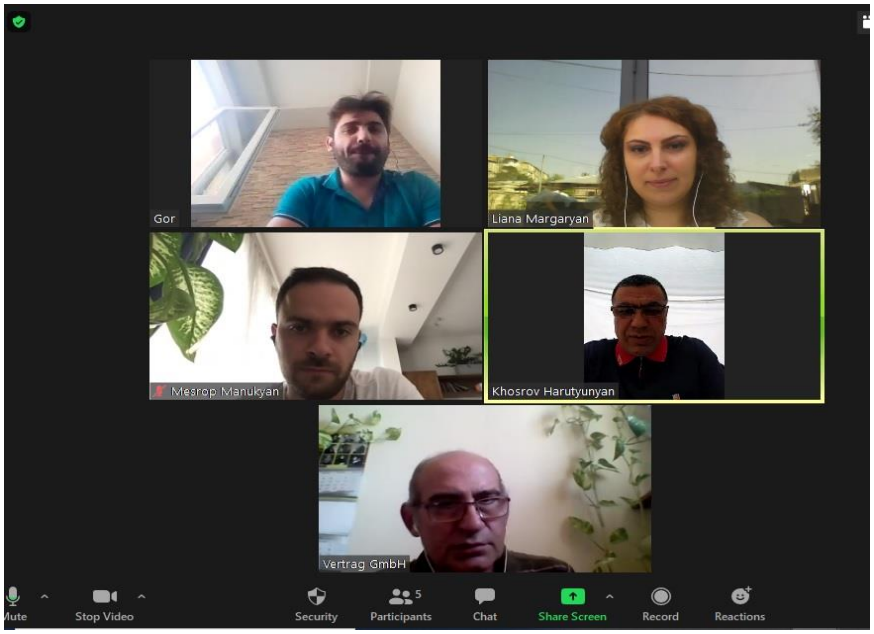

Figure 4: ASPIRED experts presenting the method to the Legal Expert in group meeting

The team conducted an online meeting with the Legal Expert and the head of the ME Water Policy Department. During the meeting, the Legal Expert presented the draft Governmental decree on method for assessment of self-purification capacity of rivers, and the international best practice on enforcement of similar decrees. The team decided that the Legal Expert will present his suggestions on the subject decree to the ASPIRED experts and the ME. The legal expert provided the first draft of the decree to the ASPIRED experts and the stakeholders for their review.

3.4 Stakeholder Coordination and Communications

During the reporting period, the ASPIRED project team provided information to USAID on the Yeghegnut water system improvement project in Armavir region (briefing material, information for USAID/Armenia newsletter, etc.), and produced a film on Yeghegnut project, used in the virtual opening event.

On July 30, the ASPIRED team organized a virtual opening for the Yeghegnut drinking water project. USAID/Armenia Mission Director Debora Grieser, USAID/Caucasus Regional Contracting and Agreement Officer Deborah Perlman, Armavir Governor Hambardzum Matevosyan, representatives of Yeghegnut Municipality, USAID ASPIRED and PURE-Water Projects, as well as key partners attended the project opening. The event livestream video and post event coverage were posted on the ASPIRED FB page; USAID/Armenia also shared the information on its FB page. The video "24/7 drinking water supply in Yeghegnut community in Armenia due to USAID funded project" is now available on USAID Armenia YouTube channel at: https://www.youtube.com/watch?v=nthYp0H7YXI.

On August 11, Yeghegnut water project post completion success story was posted in Armenian and English in the ASPIRED FB page; post completion coverage (English version) was shared with the ME&A Home Office and posted on their website at: https://www.meandahq.com/water-is-life-clean-water-for-yeghegnut-community/.

On September 10, ASPIRED conducted another virtual opening for the USAID-funded Pokr Vedi irrigation system improvement project in Ararat Marz. The Project was completed through the successful collaboration of USAID ASPIRED, PURE-Water Projects, and Artashat WUA. The opening was attended by the USAID Mission Director Deborah Grieser, Ararat region Governor Garik Sargsyan, President of Armenian Fund Inc. Maria Mehranyan, Mayor of Pokr Vedi Norik Martirosyan, implementing and partner organizations, and additional guests. A bilingual complete coverage was posted in ME&A's FB page and website, providing details on the opening and the Project.

The virtual event highlighted the operation of the newly installed chlorination and pump stations, the installation of the new water pipes, as well positive remarks by community residents on the positive impact of the project. The information is available at https://www.facebook.com/aspired.project.

Partnerships

Following is the status of potential partnerships that ASPIRED has been discussing:

Pernod-Ricard

Throughout July-August, the ASPIRED team continued working with Pernod-Ricard to pursue a potential partnership within a community-based water upgrade project in Armavir or Ararat regions. The team prepared 3 brief outlines for the Company, as agreed earlier in July (Hovtashat, Mrghashat, Sardarapat), including budget breakdown, information on local context, anticipated social impacts, and beneficiaries. The concepts were shared with Pernod-Richard in mid-July.

During September, ASPIRED answered to a few technical questions Pernod-Ricard had regarding the Sardarapat project. Despite providing the clarifications and Pernod-Ricard being initially interested in supporting the drinking water project, the Company informed ASPIRED that their funds were limited and will not be able to collaborate.

Izmirlyan Foundation

On August 18, ASPIRED team contacted Izmirlyan Foundation for partnership. Given the COVID-19 context, all their resources are pandemic-related. Nevertheless, the ASPIRED team shared 3 project concepts with them, as water and COVID are closely related. A follow-on meeting was held in the first half of September, where ASPIRED presented in detail the Project approaches to partnership, and the value it brings to communities and partners. Izmirlyan Foundation will present this opportunity to their Board, but informed ASPIRED that their limited resources are used on border communities, addressing social issues, such as hospital or school repair.

Football Federation of Armenia

On August 19-20, the ASPIRED team contacted the Football Federation of Armenia on potential partnership around water projects and shared 3 project concepts with them for their review. The head of the respective department, however, was reluctant to meet and discuss this further: their budget for this year is limited and focused on sport-related activities.

HSBC

On August 21, The ASPIRED team held an online meeting with HSBC Community Investment Coordinator to discuss a potential partnership, and presented the concepts of Mrgashat, Hovtashat, Sardarapat, and Vedi projects. HSBC initial reaction was positive, since its corporate social responsibility (CSR) department has supported drinking water projects in the past and would be looking into this

opportunity. The first meeting was promising, as HSBC expressed interest in supporting Mrgashat project; their CSR budget for 2020 has about $10,000-12,000 left to be spent. They will consider the opportunity for this year and a larger joint initiative next year and inform ASPIRED once decision is taken.

Unfortunately, due to the military situation in the country as of September 27, HSBC decided to channel its CSR resources to other purposes.

Other

- On August 25, ASPIRED interviewed USAID Mission Director (MD), Deborah Grieser, for the end of project video. The questions focused on the rationale for supporting the GOA within the Project and the impacts it has at national and local levels. The USAID MD highlighted a few key aspects of the US Government support to the GOA through the ASPIRED initiative, namely:
  - USAID supported the GOA in conducting rigorous analysis of the fishery sector in Ararat Valley, develop recommendations for effective use of groundwater resources, and draft governmental decrees related to water resources management.
  - USAID introduced new technologies and practices to showcase the application of innovative water and energy saving technologies in communities to improve drinking and irrigation water supply, provide access to clean and safe water for people. In addition, introduction of new technologies provides opportunities for replication of the new approach by other communities.
  - Economic and Social impact: over 32,000 people in 13 communities in Armavir and Ararat regions have been benefiting from safe drinking and irrigation water as prerequisite for improved economic benefits and community health. The number of beneficiary communities and people will notably increase due to the replication of technologies.
  - ASPIRED project has built capacities at local and national levels in water resource management, as a foundation to sustain gains of U.S. Government investments and promotion of ownership on behalf of local and national government.
  - Finally, the ASPIRED project safeguards Armenia's vital water resources in the Ararat Valley. This allows the development of the region's agriculture, energy and fish sectors, and serves as an example of how innovative solutions can be developed when working together as partners, and when collaborating parties share common goals and aspirations for the Armenian people.
- During the reporting period, the ASPIRED project released the following outreach materials, reflecting on progress of pilot projects, ongoing activities and field works, and posted the stories on the ASPIRED Facebook page[27] and ASPIRED webpage[28]:
  - September 10: Detailed narrative on the first session of the Working Group of the ME in Yerevan, Armenia, to discuss a) the ASPIRED project preliminary findings on hydrologic and hydrogeologic conditions in the Ararat Valley; and b) the draft Ararat Valley Atlas.
  - September 11: A bilingual detailed narrative in ME&A FB on virtual opening of the Pokr Vedi irrigation project, resulting in irrigation water supply for over 400 farmers.
  - September 16: The ASPIRED team finalized a Newsletter summarizing success stories within the project. ME&A home office and USAID will provide input prior to its posting in the ME&A website next quarter.

4. General Administrative Issues

In response to the COVID-19 global pandemic, ME&A adopted a Work from Home policy for its Home Office and Field Offices and developed a COVID-19 Preparedness and Mitigation Plan. This document identifies potential risks, ME&A's plans to mitigate and address those risks and establishes procedures to

[27] https://www.facebook.com/aspired.project/

[28] http://www.aspired.wadi-mea.com/en/news-and-announcements/

ensure home-based business practices providing continuity in project implementation. In accordance with this plan and the SoE in Armenia, the ASPIRED team also developed a COVID-19 Mitigation Plan specifically addressing restrictions from the GOA as well as planned ASPIRED activities, providing mitigation measures to minimize potential delays of project activities. This Plan is being updated on a weekly basis to reflect possible changes. Both plans were shared with USAID.

The SoE, originally declared by the GOA on March 16, has since been extended until September 12. These extensions have been declared in 30 days increments. On September 12, the GOA declared quarantine until January 14, 2021. This regime allows going back to the office operations, taking all safety measures and rules as defined by the GOA, Armenia's National Center for Decease Control and World Health Organization.

However, after the initial SoE period was extended on April 14, restrictions were lifted for some sectors, including outdoor construction, which allowed the Project to resume construction, some field works, and planned site visits.

The ASPIRED team equipped its vehicles and team members with personal protective equipment including face masks and sanitizers, along with instructions to employees on protective measures from COVID-19 infection declared by the GOA. The team developed and signed a memo on self-protection to provide guidance on safety measures to be followed by all employees during site visits. The memo was shared with USAID.

In August, ASPIRED team developed an office re-opening plan to resume office operations in accordance with the SoE restrictions announced by the GOA. The plan includes the protective measures for the office staff and visitors; these protective measures are in alignment with all the rules and guidelines issued by the GOA, Armenia's National Center of Disease Control and the World Health Organization. The ASPIRED team also developed a schedule for employees to work in shifts. According to the schedule, the team members will rotate between working from home and from the office. The aim of this is to ensure social distance, and at the same time have presence in the office, which many of the staff members find more productive for their work. Regular contact, virtual, as well as live interaction within the team, with the Home Office, and the USAID COR is well-maintained. The team continues applying all the online tools, such as Microsoft Teams, Google Hangouts and Zoom.

On August 13-14, the ASPIRED team conducted an annual staff retreat, in a rented conference room where social distancing was permitted, to develop the project work plan for FY20. The team summarized activities carried by the project components during the FY20, highlighted the achievements, challenges faced, actions undertaken to overcome the challenges during the implementation of the planned activities, and lessons learned. The team presented the impact of the COVID-19 pandemic on the project implementation and delays of some project deliverables by the end of the programmatic Year 5. At the end of the planning sessions the team prepared a project work plan for the upcoming Year 6. The ASPIRED COR participated remotely in the sessions of the staff retreat and gave her insights on the proposed activities and implementation approach under each task area, as well as the Project Monitoring and Evaluation Plan, including PMP.

During August and September, the ASPIRED project shared the Year 6 draft Work Plan with the ME and ME&A Home Office for review and comments. The team incorporated the comments received from the Ministry and ME&A Home office and submitted to USAID for approval on September 25. At the time of preparing this report the team received USAID's comments. The work plan will be updated and resubmitted to USAID for approval in October 2020.

The following Table summarizes administrative announcements during the reporting period:

Table 4: Administrative announcements and actions

Date	Announcements and Actions
July	The ASPIRED team contracted Nara Ghazaryan to replace Project Communications and Performance Manager on her maternity leave for period July through October. The contract was signed on June 29, 2020.
August	The ASPIRED team evaluated applications received in response to the announcement on short-term consultancy service for the Legal Expert position back in June 2020. The ASPIRED team finalized the selection of the Legal Expert and contracted Mesrop Manukyan on August 18, 2020.
July/ August	The ASPIRED team contracted Gevorg Grigoryan for video shooting and preparing a film on Yeghegnut and Pokr Vedi projects on July 21 and August 26, respectively.
August/ September	The ASPIRED team announced a vacancy for the Program Associate position. After evaluating the applications and summarizing the results of the interviews with the short-listed candidates, Lala Aslikyan was selected to replace Anush Yesoyan during her maternity leave.
September	The ASPIRED team contracted Yereky Mek tegh LLC to eliminate damages under the Vedi Urban Irrigation project on September 16, 2020.

5. Environmental Compliance

During the reporting period, the Project team continued monitoring environmental compliance of the ASPIRED projects in Pokr Vedi, Vedi and Yeghegnut communities. The team conducted monitoring visits to the project sites; no violation of environmental and safety issues was observed. In July, the Project Environmental Specialist provided online guidance to the ASPIRED Subcontractor Yereky Mek Tegh on implementation of environmental and social measures as envisaged in the EMMP, for installing a three-dimensional pyramid grid at the inlet of Khachpar irrigation system, to protect solid waste going into the main irrigation.

The project specialist also followed-up with the Subcontractors and other implementing partners on the proper implementation of COVID-19 safety measures at the sites on a regular basis, such as provision of personal protective equipment to the employees, including medical masks, gloves, hand sanitizers on a daily basis, and ensuring their proper use. In addition, she requested Subcontractors to follow the guidelines of the social distancing at the construction site, and other requirements defined by the GOA (such as regular checking of body temperature of the employees).

In August-September, the ASPIRED team collaborated with the representatives of Sardarapat and Mrgashat partner communities in collecting baseline environmental and social data for the project areas, which are needed for the environmental review of the new pilot projects. The ASPIRED Environmental Specialist reviewed the hydrogeological information, as well as water quality analysis results provided by the Hydrometeorology and Monitoring Center of the ME to the Sardarapat community for a groundwater well, intended to use as source of drinking water supply. Both documents prove the water in the groundwater well is suitable for drinking purposes. Project team visited both project sites in September, met with the community representatives and maintained regular communication with them in order to guide them on following processes and steps for them to obtain WUP.

During the next quarter, ASPIRED project Environmental Specialist will prepare environmental review documentation, including the environmental review checklist and environmental monitoring and mitigation plan (EMMP), for improvement of drinking water supply network and services in Sardarapat community and irrigation network in Mrgashat community in the Ararat Valley. She will collaborate with the project

Engineer and representatives of the Griboyedov community on collecting baseline environmental data on the planned pilot project activities that are targeted at efficient use of groundwater resources for irrigation and preparing the environmental review documentation.

Finally, the project specialist will provide a) environmental and social compliance trainings to the subcontractor companies who will be selected for implementation of the projects, and b) compliance monitoring of the project activities.

6. Existing Problems or Issues

In this section the ASPIRED project provides information on the general problems/issues the project faced during the reporting period and the actions undertaken to overcome them.

The SoE declared in Armenia in March 2020 continued posing some implementation challenges for project activities, particularly affecting effective communication with the ME and other stakeholders, including conducting in-person discussions and capacity building programs. To minimize anticipated disruptions, the ASPIRED team developed a Mitigation Plan to specifically address GOA restrictions and ASPIRED project activities, in addition to the general COVID-19 Mitigation Plan developed by ME&A Home Office.

As COVID-19 cases continue increasing, the ASPIRED team is facing challenges on organizing live discussions with its key stakeholders; currently the live discussion on the Draft Governmental decree has not yet been defined by the GOA due to this situation. The ASPIRED team expects to have some news on the next reporting period.

Following is a table with a list of activities that have experienced or might experience implementation set backs, along with ASPIRED mitigation measures.

Table 5: Summary of Issues and Actions Taken

Activity Delays	ASPIRED Actions Undertaken
LOW COST AND WATER EFFICIENCY TECHNOLOGIES	
Despite the efforts and involvement of the team and the international aquaculture expert in the process of starting operation of the ATTC, the owner of facility refused to proceed with the previously agreed option of involving a third-party operator.	At the time of preparing this report, ASPIRED and the ATTC owner decided to agree with Dr. Stephen on modifications to be made in the facility. Based on this, the farm owner will give his final decision on operation of the ATTC – either with involvement of a third-part operator or with his participation. For this reason, the team met with Tigran Aleksanyan, the Deputy Head of Division of primary agricultural production of the Ministry of Economy and discussed the possibility of organizing a tour around the ATTC facilities. The Ministry representative recommended an online dissemination event in the light of the COVID-19 pandemic and recent tensions among the fish-farmers and the Ministry. ASPIRED is currently working on organizing the dissemination event in November.

The military crisis of Azerbaijan in Nagorno-Karabakh, a disputed area between Armenia and Azerbaijan since early 1990's, exacerbated the safety situation in the country. On September 27, the GOA announced military emergency in the country: this implied mobilization of human and technical resources throughout the country, including Project regions. The team assumes that the crisis will impact on the project activities planned for the next quarter.	ASPIRED project will propose mitigation measures for the different components during the next reporting period, depending on impacts of the situation on the planned activities.

7. Activities for the Next Quarter

7.1 Water Resources Data

- Work with the ME technical personnel on identification of the existing datasets, including water-related, on biodiversity, waste, and atmospheric air for linking with the SWCIS Data Warehouse. Based on this, ASPIRED and ME fill finalize the new requirements and timeline for upgrading the SWCIS to accommodate structural changes in the Ministry.
- Assist the ME personnel on development of a conceptual framework for the future environmental information system, to be developed by the ME over a long-term period.
- Work with the ME to facilitate their decisions on the following items for operationalization of the SWCIS Data Warehouse online:
    - A website where the Data Warehouse could be uploaded for online operation and maintenance of the SWCIS;
    - Levels of authorization to be granted to various stakeholder institutions, including departments within the ME, other ministries, and the public for online use of data; and
    - Security requirements for hardware and software for the operation of the SWCIS and online portal for submission of applications for water use permits.
- Finalize analysis of the water management scenarios in Ararat Valley, in collaboration with the ME, using DSS and groundwater flow model.
- Finalize ASPIRED deliverable on water balance, water supply and demand balances of Ararat Valley, estimated values of natural groundwater reserves, groundwater recharge, and volume of sustainable groundwater abstraction. After USAID's review and concurrence, present the findings to the stakeholders.
- Conduct training programs on application of the Decision Support Tools, including the DSS to determine water balance, water supply and demand balance; and groundwater modeling AHGW, GMS and MODFLOW tools to assess the effects of groundwater abstraction on the state of the aquifers. Prepare a final report on the capacity building program.
- Work with the Ministry on finalizing the mechanism for handing over the flow meters and data loggers to the ME.
- Collaborate with the ME on the development of technical specifications for SCADA software.

- Prepare the final version of Armenian and English versions of the Ararat Valley Atlas and a comprehensive geodatabase for printing and dissemination among the stakeholders, both in hard and digital formats.
- Collaborate with the HMC on finalization of the technical specifications for refurbishments of the selected groundwater monitoring wells in the Ararat Valley and initiate a procurement for the services of a subcontractor for restoration and refurbishment of the wells.
- Finalize the Armenian and English versions of the Ararat Valley Atlas based on the COR's feedback, and ME WG comments on hydrologic and hydrogeologic conditions in Ararat Valley.

7.2 Low Cost and Water Efficiency Technologies

- Submit the Hovtashat project extension concept to USAID for approval. Once cleared, launch the implementation phase of the project.
- Submit the Sardarapat and Mrgashat project concepts to USAID for approval. Once cleared, launch the implementation phase of the project.
- Organize an online event for fish farmers in November for dissemination of the technologies piloted under the ATTC project.
- Prepare draft project concepts for well sealing and efficient irrigation in Griboyedov village, endorse the drafts with the Community.

7.3. Water Regulation and Enforcement

- Coordinate the work of the experts with the governmental points of contact for their feedback and recommendations on the method for assessment of self-purification capacity of rivers.
- Develop the second draft of the Governmental decree on the method for assessment of self-purification capacity of the rivers based on the recommendations provided by the stakeholders.
- Develop the user manual on the method for assessment of self-purification capacity of the rivers.
- Develop the final Governmental decree on the method.

7.4 Stakeholder Coordination and Communications

- Finalize the Newsletter on success stories of ASPIRED project and post on the ASPIRED webpage and FB.
- Follow up with the local NGO and Coca-Cola Foundation on potential partnership in Sardarapat project.