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ADVANCED SCIENCE & PARTNERSHIPS FOR INTEGRATED RESOURCE DEVELOPMENT PROJECT

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Advanced Science & Partnerships for Integrated Resource Development

REPORT

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Table of Contents

List of Acronyms

AAB	Ararat Artesian Basin
ASPIRED	Advanced Science and Partnerships for Integrated Resource Development
BMO	Basin Management Organization
CEW	Clean Energy and Water
CoP	Chief of Party
COR	Contracting Officer's Representative
DO	Development objective
DSS	Decision Support System
EA	Environmental Assessment
EC	European Commission
EIMC	Environmental Impact Monitoring Center
EMMP	Environmental Mitigation and Monitoring Plan
ERGIS	Environmental Research and GIS
ESS	Environmental Scoping Statement
EU	European Union
GIS	Geographic Information System
GOA	Government of Armenia
HMC	Hydrogeological Monitoring Center
ICARE	International Center for Agribusiness Research and Education
IEE	Initial Environmental Examination
IR	Intermediate Result
ME&A	Mendez England and Associates
MoA	Ministry of Agriculture
MNP	Ministry of Nature Protection
MoENR	Ministry of Energy and Natural Resources
NGO	Non-Governmental Organization
PMP	Performance Management Plan
QA/QC	Quality Assurance and Quality Control
SCADA	Supervisory Control and Data Acquisition
PEER	Partnership for Enhanced Engagement and Research
PSRC	Public Services Regulatory Commission
SCWS	State Committee on Water Systems
SOW	Scope of Work
SWCIS	State Water Cadaster Information System
TO	Task Order
WRMA	Water Resources Management Agency
WADIDIQ	Water and Development Indefinite Delivery/Indefinite Quantity Contract
WUP	Water Use Permit
USAID	United States Agency for International Development
USATF	United States-Armenia Task Force
USGS	United States Geological Survey

1. Executive Summary

This Report describes the programmatic activities implemented by the Advanced Science and Partnerships for Integrated Resource Development (ASPIRED) Project in the second quarter, covering the period of January through March 2016. The Quarterly Report reviews progress and achievements in each of the Program areas during the reporting period, and describes planned activities for the next quarter. It also highlights challenges and actions taken.

1.2 ASPIRED Summary

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

To this end, the ASPIRED project will be focused on several critical areas:

1. Water Resource Data
2. Technology
3. Regulatory framework/enforcement of laws
4. Coordination across stakeholders

A strong emphasis is placed in building partnerships with USAID Global Development Lab, the US Geological Survey (USGS), the private sector, research organizations and international donors to pilot innovative water and energy efficiency technologies, and to promote better water resource monitoring, planning and sustainable management.

1.3 Highlights from the Reporting Period

- ASPIRED's Launch Conference was held on February 10, 2016.
- The ASPIRED Project subcontracted the Hydrogeological Monitoring Center (HMC) of the Ministry of Nature Protection (MNP) for conducting inventory of natural springs, groundwater wells and fish farms in the Ararat Valley.
- A well-inventory training was conducted by the USGS for the HMC, the Water Resources Management Agency (WRMA), and other specialists with support from ASPIRED and ICARE teams. USGS and ASPIRED experts also collaborated on the preparation of the hydrogeological framework of the Ararat Valley.
- The ASPIRED Project will work with Environmental Research and GIS NGO (ERGIS) and UNDP/GEF Small Grants Program on the implementation of an irrigation project in Hayanist. Negotiations are underway between USAID and Coca Cola Hellenic HBC on possible co-financing of the project. The Hayanist community signed a commitment letter of their contribution to the project.
- The ASPIRED Project web page in English and Armenian languages, integrated within ME&A's WADI web site was designed and launched http://www.aspired.wadi-mea.com.
- Advisory services were provided to the MNP and WRMA to facilitate adoption of the Southern

Basin Management Plan by the GOA. The ASPIRED Project representatives participated in the public hearing held in Kapan, and provided in-house training to the WRMA staff on ecological flow calculation methodology.

2. Summary of Performance Indicators

The Performance Indicator Reference Sheets were filled and submitted to USAID during the reporting quarter. On March 1 & 2, the Chief of Party (COP) and the Project Management Specialist participated in the USAID Monitoring and Evaluation workshop. Summary of performance indicators for the second quarter of FY 2016 is presented in the table below.

	Indicator	Target for Year 1	Quarter 2	LOP (as of now)	Frequency of reporting	Notes: Descriptions/Comments/Assumptions
1.1.1	Percent (of total) of datasets for the Ararat Valley publicly accessible	0	0	0	Annual	This indicator is 0 for Year 1. Total # of the main datasets are required which shall be incorporated in the geo-coded system for evidence-based decision making. 80% of all datasets available on Ararat valley will be made public which is actually 100% of all the data which can be made publicly available in compliance with the RA legislation. The data will be disaggregated by ASPIRED project and USGS, Global Lab in proportions. Further projections (setting of targets) on data disaggregation by these agencies will be possible to make based on the Y1 outcomes.
1.1.2	Percent (of total) wells mapped in the Ararat Valley.	30	0	0	Annual	The inventory of wells was started in March 2016, therefore this indicator will be reported in the quarters to come.
1.1.3	Number of stakeholders engaged in data collection activities	5	7	7	Annual	The target for Year 1 includes existing ASPIRED stakeholders (four government agencies and PEER grantee, all engaged in data collection activities). ASPIRED works with these organizations, plus two more stakeholders - the USGS and the Institute of Water Problems - are likewise engaged in the collection of data on groundwater resources in the Ararat Valley. The ASPIRED collaborates with the USGS under the data component. In the past quarter, the team also met with the representatives of the Water Problems Institute and agreed on exchanging the data.

1.2.1	GIS based DSS for the Ararat Valley developed	0	0	0	End of project	The target is 0 for Y1.
1.3.1	Number of fisheries with automatic data system installed	0	0	0	Annual	The target is 0 for Y1.
1.4.1	Percent (of total) coverage of groundwater extraction points monitored	28	0	0	Annual	There is no data to report on this indicator in Q2[1]. .
2.1.1	Number of groundwater extraction reduction technologies piloted and evaluated	0	0	0	Annually	The target is 0 for Y1.
2.1.2	Thousands of cubic meters of water saved annually in Ararat Valley	0	0	0	Annually	The target is contingent upon indicator 2.1.1 which is set 0 for Y1.
2.2.1	Number of water use-related energy efficiency and/or renewable energy technologies piloted and evaluated	0	0	0	Annually	The target is 0 for Y1.
2.2.2	Megawatt hour of energy saved annually	0	0	0	Annually	This target is contingent upon indicator 2.2.1 which is 0 for Year 1.
2.2.3	Clean energy generated annually	0	0	0	Annually	This target is contingent upon indicator 2.2.1 which is 0 for Year 1.
2.2.4	Gains in the reduction of GHG emissions as a result of USG assistance	0	0	0	Annually	This target is contingent upon indicator 2.2.1 which is 0 for Year 1.
2.3.1	Number of successful technologies recommended and shared with stakeholders and policy-makers	0	0	0	Annually	This target is 0 for Y 1.
2.4.1	Number of technologies to permanently close illegal or abandoned wells piloted	0	0	0	Annually	This target is 0 for Y 1.

[1] About 3,318 groundwater wells existed in the Ararat Valley in 2014, out which 1,096 wells were operational and used for various purposes according to WUP data as presented in the Draft Ararat Valley Management Plan. About 250 wells used by fish farms were monitored by HMC in 2014-2015 (based on contracts), 44 wells used by water supply companies for drinking purposes were monitored, 3 groundwater wells used in fish farms were monitored using automated online monitoring system (with EU funding). Ten more wells in selected fish farms will be monitored with ASPIRED funding by the end of the project. It is also expected that the percent of groundwater extraction monitored will increase gradually as a result of improved regulations on compliance and enforcement and strengthened capacities of the SEI and BMOs

3.1.1	Number of trainings for building capacity of MNP including BMO in groundwater monitoring	0	1	1	Quarterly	The training on the inventory of groundwater wells was conducted for the divisions of the MNP (WRMA, HMC, SEI), including representatives of Ararat and Hrazdan BMOs. The training was conducted jointly with USGS.
3.1.2	Number of ministry staff (and other agencies) trained in sustainable water resource management, including environmental compliance.	0	0	0	Quarterly	The indicator refers to the trainings on enhanced up-to-date SWCIS and MIS for the Ararat Valley and on enhanced transparent water use permitting, control and oversight systems. The indicator will be disaggregated by gender.
3.2.1	Number of workshops and consultations with stakeholders to discuss water fee levels	4	1	1	Quarterly	This indicator covers the stakeholder consultations to be conducted with fisheries, governmental agencies, and NGOs. The first meeting of the Interagency Task Force was held in January 2016.
3.3.1	Package of recommendations to address water permitting monitoring and enforcement measures provided to GoA	0	0	0	Annually	The targets set in the PMP refer to the package of recommendations, drafted by ASPIRED and submitted to the Government. The target is set 0 for Year 1.
4.1.1	Number of international and local organizations participating in the system mapping activities	8	15	15	Quarterly	This figure includes international (donor), private and public sector organizations, including research institutions, which were involved in the system mapping activities. Government agencies were not counted.
4.2.1	Percent of total funding leveraged from stakeholders for water resources management activities.	0	0	0	Annually	This indicator refers to the in-kind and financial contribution to be made by implementing partners. It will be reported in the next quarter, subject to the approval of the project in Hayanist village.
	Percent of population living in targeted areas with improved water management	0	0	0	Annually	This figure will be estimated upon completion of projects with the community impact.
	Number of key implementation steps taken to improve water management in Ararat valley	1	1	1	Annually	The team started the inventory of groundwater wells and springs in Ararat Valley in Year 1.

3. Program Implementation

Water Resource Data

During the reporting period, the following activities took place:

- Started inventory of wells, springs in the Ararat Valley. The HMC was subcontracted for this activity.
- Assisted the USGS in the organization of the training on well inventory for the representatives of HMC, WRMA and other organizations. Separate in-depth training was conducted by the USGS for the ASPIRED Project staff.

Based on the bid evaluation results, the ASPIRED Project signed a subcontract with the HMC of the MNP for conducting inventory of natural springs, groundwater wells and fish farms in the Ararat Valley. The ASPIRED and HMC teams conducted three technical meetings to discuss and finalize the list of parameters to be monitored and recorded in the field; spreadsheets to be filled with filed data; list of lithological layers in the Ararat Valley, based on which the inventory data and existing archive data will be digitized for further use in groundwater modeling, format of the first deliverable and the ASPIRED Project team comments on the Inception Report with detailed work plan for implementation of the inventory.

Furthermore, the Project Hydrologist and Data Management Specialist conducted field measurements in selected sites in the Armavir Marz of the Ararat Valley to cross-check the accuracy of the preliminary field inventory data provided by the HMC. HMC was instructed to correct minor inaccuracies and gaps.

On March 2 the USGS, with support of the ASPIRED and ICARE teams, completed its 4-day training program on groundwater well inventory and field protocols for collecting research data for nearly twenty representatives of stakeholder organizations, including the WRMA and its respective Ararat and Hrazdan Basin Management Organizations, State Environmental Inspectorate, Hydrogeological Monitoring Center of the Ministry of Nature Protection, and AUA Acopian Environmental Center. ICARE's and ASPIRED's staff also participated in the training. The ASPIRED team helped USGS in handling logistics, translating and printing presentations, compiling list of participants and sending out invitations, and providing catering. Proceedings of the training program and presentations delivered by USGS team are submitted to USAID along this Quarterly Report.

During the USGS mission in Armenia, the ASPIRED technical team worked with USGS experts on agreeing on next steps for preparing the data and information needed to construct the hydrogeological framework for the Ararat Valley, including the format of the database.

During the reporting period, the ASPIRED team also clarified data needs for conducting the analysis of water fee rates. For this purpose, the team met with WRMA respective officials to discuss the data needs and possible sources for obtaining the required information. The ASPIRED team was provided with calculations made in 2013-2014, which served as the basis for revising the groundwater use fee rate later. It was agreed that the ASPIRED team will work with WRMA staff to receive the required data from the Water Use Permit (WUP) database.

Furthermore, in March the ASPIRED Project team received datasets from key stakeholder agencies, which included digital and paper-based data on climatic, hydrological and hydrogeological features of the Ararat Valley, permitted and actual use of water resources, fish farms in the Ararat and Armavir Marzes, economic and financial data on fish production, import and sales, etc. The Project's technical team initiated assessment of data accuracy, consistency, gaps, etc., and will finalize its findings in a report on data availability and gap analysis to be submitted to USAID in April 2016.

On March 25 USAID/Armenia and ASPIRED Project representatives met with the Deputy Head of the WRMA to discuss WRMA's priority issues and USAID's assistance. The ASPIRED Project assistance in installing automated groundwater use monitoring system in selected fish farms, enhancing the State Water Cadaster Information System (SWCIS) for the Ararat Valley, as well as cooperation with other donors in addressing these issues were discussed. Over the coming months the Project will work with the WRMA on identifying the needs for improving the State Committee on Water Systems (SWCIS).

Additional Support to MNP/WRMA:

The data component team continued supporting the MNP in the process of preparing the Southern Basin Management Plan and Draft GOA Decree on new method for calculation of ecological flow in rivers. More specifically:

- Prepared and submitted to the MNP and WRMA the package with hard and electronic copies from stakeholder consultations conducted by the Clean Energy and Water (CEW) Program on Vorotan, Voghji and Meghriget river basin management plans, the Southern Basin Plan and environmental assessments (EA). Power Point presentations and other materials on the Southern BMP, were provided to the WRMA for the public hearing in Kapan on March 15.

- The Team met with the MNP Deputy Minister and heads of the Departments and Divisions of the MNP and WRMA involved in the Southern Basin Plan's finalization and adoption process on January 27. The meeting was requested by Khachik Hakobyan, Deputy Minister, to learn from the ASPIRED's technical team about the details of the planning process, content of the Southern Basin Management Plan and its compliance with the amended Water Code requirements (amendments to the Water Code became effective on January 30, 2016). The team also assisted the WRMA in re-visiting figures on water supply and demand balance projections in the Vorotan, Voghji and Meghriget river basins.

- The ASPIRED project team participated in the public hearing on the Southern Basin Management Plan in Kapan organized by the WRMA. The Ministry intends to finalize the environmental impact assessment procedure by mid-April and submit the management plan to the GOA by the end of April for approval.

- In January, the project Hydrologist delivered two training sessions for the WRMA staff on the new method of the calculation of ecological flow proposed by the USAID's CEW Program. On March 25, the Project Hydrologist participated in MNP's Advisory Council meeting where the new method was presented.

Low Cost and Water Efficiency Technologies

During the reporting period, the engineering staff focused on the following activities:

- Market analysis and preparation of the report on Opportunities for Application of Advanced Technologies;
- Site visits to fisheries
- Preparation of concept papers for pilot project implementation

Upon completion of the market review, the team submitted the report on the Opportunities for Application of Advanced Technologies at fish farms. The report was also shared with the international

expert on aquacultures Louis Landesman, for review and input. The report was finalized and submitted to USAID in March.

The ASPIRED engineers arranged a number of visits to fisheries along with representatives of ICARE to discuss opportunities for optimization or profiling of fisheries with fish farm owners interested in the implementation of projects. One of the feasible projects is the secondary use of water discharged from fisheries for irrigation needs. Water tests were conducted based on FAO standards, which proved to be safe for crop irrigation. A project with this characteristics is planned in Hayanist village for implementation in partnership with ERGIS NGO.. The concept paper and EMMP documents for the project are in the preparation stage.

USAID and Coca-Cola Hellenic HBC started negotiations on partnership and possible co-sponsorship of USAID-funded activities. By the request of USAID, the ASPIRED team prepared a document with concept papers and ideas of collaboration with Coca-Cola.

In addition, the ASPIRED engineers met with USAID's Science and Technology Advisor Patrick Mayer to discuss possible project ideas for funding under the USAID Global Lab DIV. The concept papers were prepared and sent to Patrick Mayer for review.

Water Regulation and Enforcement

A short-term objective for the legal component is to provide recommendations to the GOA on the optimal water fee rates for the use of groundwater by fisheries. In coordination with the MNP, the ASPIRED team facilitated the establishment of the Interagency Task Force to accomplish the study of optimal water fee rates for water abstraction by fisheries in Ararat Valley and provide recommendations to the Government.

The Interagency Task Force (ITF) consists of the representatives of the different government agencies, the Standing Committee on Agriculture and Environmental Issues of the National Assembly and the Office of the President of Armenia as well as sector representatives. The Task Force will have four meetings to come up with the recommended approach to setting the groundwater fee rates for the fisheries. The introductory meeting, which took place on January 15, was characterized by active involvement in the discussion of all partied concerned with this issue. The ASPIRED team presented the goals and main components of the projects, the purpose of the establishment of the Interagency Task Force and expected input of its members. The representatives of the fish farmers' associations expressed their concern of possibly rising water fee rates. There was a heated debate on a number of issues, all leading to pros and cons of the likely increase of the fee rates by the Government.

The first meeting made it clear that the Roadmap of Activities was required as a guiding document for all parties to understand their involvement and the sequence of activities. The ASPIRED team prepared the Roadmap and shared with the members of the Task Force.

In March, the ASPIRED team started to survey the fisheries. The survey questionnaires were drafted and shared with the Task Force members for their input. Part of the questionnaires was sent via e-mail to the fish farms. Others were visited and interviewed on the spot. The survey began in March 2016.

For sampling purposes, an updated list of fisheries including water use permits was obtained from the Ministry of Agriculture and WRMA. The ASPIRED team contacted the fish farms to update their operational status, their contact information. and ask for consent to participate in the survey. Most of the fish farm owners avoided participating in the survey, making the sampling size small and challenging.

Reasons for rejection were either their reluctance to participate or an argument that the business was in the process of liquidation. Few of the fisheries agreed to share data. Preliminary findings will be summarized and presented during the second meeting of the ITF at the beginning of April.

In addition to the survey, the ASPIRED team also conducted an economic analysis of the country's fish-breeding industry looking at the existing and potential domestic market share and export potential, as well as future predictions. The preliminary analysis will be presented during the upcoming ITF meeting and discussed with the participants. The team also analyzed the international best practice on classification of the fish farms which use groundwater for fish breeding. The findings and recommendations on the fish farm classification and its relation to diversified water resource fee will be presented and discussed with the ITF members during the workshop in April.

Stakeholder Coordination

During the reporting period, the following activities were conducted:

- Meet with potential donors and stakeholders from private and public sectors to seek collaboration opportunities.
- Mapping of stakeholders for USAID.
- Communications and outreach activities

The ASPIRED team makes sure that sufficient coordination and maximum use of available resources is achieved between USAID, the Global Development Lab, USGS and ICARE (via its PEER grant) in implementation of the USAID objectives for the conservation of water resources in the Ararat valley. The USGS training on well inventory was completed successfully on March 2, with the ASPIRED data team assisting in the training organization, and ICARE providing the venue for the training. Information on the training can be viewed in the ASPIRED Facebook https://www.facebook.com/aspired.project/ and web pages http://www.aspired.wadi-mea.com.

The ASPIRED team met with the UNDP/GEF and ERGIS to discuss the co-funding options for an irrigation project in Hayanist village. ERGIS reviewed its existing budget and agreed to allocate $10,500 for the infrastructure component of the project. In addition to that, ERGIS will also build the capacity of farmers and organize a series of farmer trainings on different topics such as crop cultivation, selection of crops, and application of fertilizers, etc.

The ASPIRED team met with representatives of Coca Cola Hellenic to discuss possible collaboration in the area of resource management. The ASPIRED team presented the project and its components.. Coca Cola is interested in a number of areas, particularly water projects that have valuable impact on communities, and provision of the technical consultants/experts with matching competences from their worldwide pool for the needs of ASPIRED. Based on the meeting with USAID, a memo highlighting potential collaboration opportunities was prepared and sent to USAID.

On March 3, the ASPIRED team met with the Asian Development Bank (ADB) representatives to discuss possible areas of collaboration. The ADB will be structuring a loan deal with the Armenian Government on improving access to drinking water of the communities in Ararat and Armavir marzes. The project is scheduled for 2017. In this respect, as a loan conditionality, the ADB plans to integrate existing cadasters (water and real estate) into a single GIS-based cadaster for unified data collection and management. The activities of the ASPIRED Project have almost no overlap with those of the ADB, except activities related

to the water cadaster. Therefore, the ASPIRED team will continue monitoring the developments between ADB and the USG on this cadaster integration possibility.

Based on meetings with stakeholders and desk review, a report on the stakeholders' mapping was prepared and circulated internally for review and comments. The final draft report was submitted to USAID together with this quarterly report.

On February 10, the ASPIRED team officially launched the project. More than 50 participants - representatives of MNP, WRMA, HMC, other Ministries, research institutions, local NGOs and the donor community – attended the ASPIRED Project's inauguration event, which focused on the presentation of the main components and anticipated results of the project, followed by a questions and answers session. The event had wide media coverage with links provided below[2].

In March, the ASPIRED COP was interviewed by the AR TV company which prepared a detailed news spot on the efforts of USAID and the ASPIRED Project on improving groundwater resource management in the Ararat Valley to curve the resource depletion. Interviews were also taken from the Deputy Minister Simon Papyan and others. News spot available here: https://www.youtube.com/watch?v=iSPfEar23k4

During the reporting period, the team also redesigned and launched its FB page and the new web page, both available via the following links:

- https://www.facebook.com/aspired.project/?fref=pb&hc_location=profile_browser
- http://www.aspired.wadi-mea.com.

The ASPIRED page was integrated within the ME&A WADI web site. The page provides bilingual information on the progress of the project and will also include major publications and deliverables.

4. General Administrative Issues

During the reporting period, the Project hired short-term staff for the following positions: Legal Coordinator and Economist positions. The Legal Coordinator, will work on the third Legal/Regulatory component of the Project. and will coordinate activities of the ITF on optimization of the groundwater use fee rates. The Economist will provide an economic analysis to support this process.

The international STTA expert on aquacultures, Louis Landesman, was contracted to provide input to the Best Practices section of the Report on Opportunities for Application of Advanced Technologies in Fisheries prepared by the Task 2 team. Furthermore, the ASPIRED Project received approval from USAID for the services of international environmental economist STTA Benoit Laplante. He is contracted to provide assistance in the survey on optimal water resource fee.

[2] https://www.youtube.com/watch?v=0GJ-FxBxVlg; https://www.youtube.com/watch?v=HPxvoVwX_80
http://www.armecofront.net/mamlo-haghordagrutyunner/araratian-artezian-avazan/
https://www.youtube.com/watch?v=HPxvoVwX_80
https://www.youtube.com/watch?v=7Ety5gcQceE; http://www.hayastantv.club/tv/azatutyuntv.php;
http://newspress.am/archives/19521; http://www.armeniatv.am/hy/55497-55497;
http://armenpress.am/arm/news/835241/meknarkec-araratyan-dashti-storerkrya-jreri-khndirneri-lutsmann.html;
http://armtimes.com/hy/read/79173; http://news.am/arm/news/310873.html;
http://www.panarmenian.net/arm/news/205724/; http://times.am/?p=157464&l=am;
http://www.yerakouyn.com/?p=99542; http://www.lragir.am/index/arm/0/country/rss/127491;
http://www.tert.am/am/news/2016/02/10/fish/1927376; http://henaran.am/174930.html;
http://www.1in.am/1837444.html; http://www.tert.am/am/news/2016/02/10/fish/1927376;
http://news.am/arm/news/310859.html; http://news.am/arm/news/310890.html; http://www.1in.am/1837444.html

A subcontract was signed with the HMC on the inventory of the groundwater wells in Ararat Valley. This process is coordinated by the Water Resource Data team.

ME&A President Thomas England visited Armenia to monitor the project implementation at the startup stage and to participate in the project launch event on February 10.

5. Environmental Compliance

In March 2016 the Project Environmental Specialist, with the Project Engineer and COP visited Hayanist community to find out the community's interest in project implementation. They checked the baseline environmental conditions and conducted the screening of potential impacts caused by project activities.

The environmental documentation for the Hayanist project, including the Environmental Review Checklist, and Environmental Mitigation and Monitoring Plan will be prepared in April.

6. Planned Activities for the Next Quarter

6.1 Data

- Supervision of inventory data collection process and submission of deliverables by the Subcontractor.
- Work on assessment of data availability, accuracy and gaps for implementation of the ASPIRED Project tasks on improving management information system for the Ararat Valley and enhancing the Decision Support System.
- Finalize and submit to USAID Project reports on training program on groundwater well inventory and collection of scientific data; Data Availability and Gap Analysis Report.
- Finalize digitizing paper maps on geology and hydrogeology of the Ararat Valley; the lithological structure of selected groundwater wells in the Ararat Valley using fact-sheets from the National Academy of Sciences and share with USGS.
- Develop the GIS layers using currently available datasets, including GIS map of surface and groundwater flow directions.
- Work with the USGS team on the hydrogeological framework of the Ararat Valley.
- Review of available open-source groundwater modelling packages, including the GIS-based extensions and work on datasets. Preparation of a project report on the conceptual scheme of the decisions support tool for the Ararat Valley, including components and subcomponents, data input and output, etc.
- Work with USGS, USAID Global Development Lab, Jefferson Science Fellowship Program on identification of remote sensing data and technologies, characterization of data availability for designing the hydrogeological framework of the Ararat Valley, etc.

6.2 Pilot technologies

- Submit project proposal of Hayanist to USAID for approval and start the implementation of the irrigation project in Hayanist village following the approval.

- Elaborate concept papers for other projects.

6.3. Legal and Policy Issues

- Complete the survey of fisheries in Armavir and Ararat marzes and summarize all findings from e-mail questionnaires and face-to-face interviews.
- Organize the second meeting of the ITF in Aghveran on April 4-5, prepare presentations on the economic analysis, best practice of classification of fish farms and survey results.
- Summarize the Task Force meeting minutes and send to the meeting participants, and prepare the detailed work plan of activities.
- Meet with the stakeholders, including the MOA and MNP as well as fish farms to discuss outstanding issues.
- Plan the 3rd meeting of the ITF, prepare materials and sent to ITF members for review.

6.4 Performance Management, Communication and Donor Coordination

- Update the project communications vehicles (web site, news releases, flier, banner, etc) as needed.
- Attend/facilitate communication with stakeholders.
- Follow-up on the PMP updates, prepare weekly highlights and monthly reports.

6.5 Environmental Compliance

- Finalize the environmental review documentation for the Hayanist Project, including the environmental review checklist, EMMP, etc. Conduct regular monitoring visits to the Hayanist project site.