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BRIEF
Sept. 20, 2011 | www.mcc.gov

Armenia: From Reliable Irrigation to Profitable Agriculture

Compact Overview

In 2006, the U.S. Government's Millennium Challenge Corporation (MCC) and the Government of Armenia signed a compact that included a \$177 million investment to reduce rural poverty through a sustainable improvement the economic performance of the agricultural sector. The Government of Armenia, in consultation with MCC and local civil society groups, identified improvements in the agriculture sector as being critical to increasing economic growth and food security in the country. The MCC compact program, which concluded on September 29, included one of Armenia's largest ever irrigation infrastructure projects, accompanied by strategic assistance to the nation's farmers, agribusinesses and water supply institutions, and investments in rural road construction and maintenance.

The compact originally included two projects, the Irrigated Agriculture Project and the Rural Road Rehabilitation Project (MCC placed the road project on hold in March 2008 due to governance concerns). The Irrigated Agriculture Project consisted of two complementary activities : the Irrigation Infrastructure Activity and the Water-to-Market Activity.

The Irrigation Infrastructure Activity's achievements included:

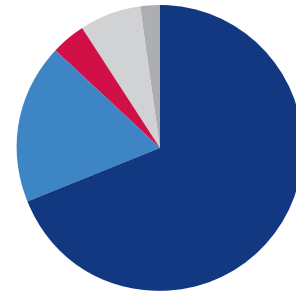
- ★ Rehabilitation of 17 irrigation pumping stations;
- ★ Construction of five gravity-fed irrigation systems, including almost 50 kilometers of canals;
- ★ Refurbishment of over 40 kilometers of new canal lining;
- ★ Installation of over 260 water structures on six main canals;
- ★ Rehabilitation and improvement of approximately 220 kilometers of tertiary canals across approximately 100 communities; and

Armenia Compact at a Glance

SignedMarch 27, 2006

Entry into Force..Sept. 29, 2006

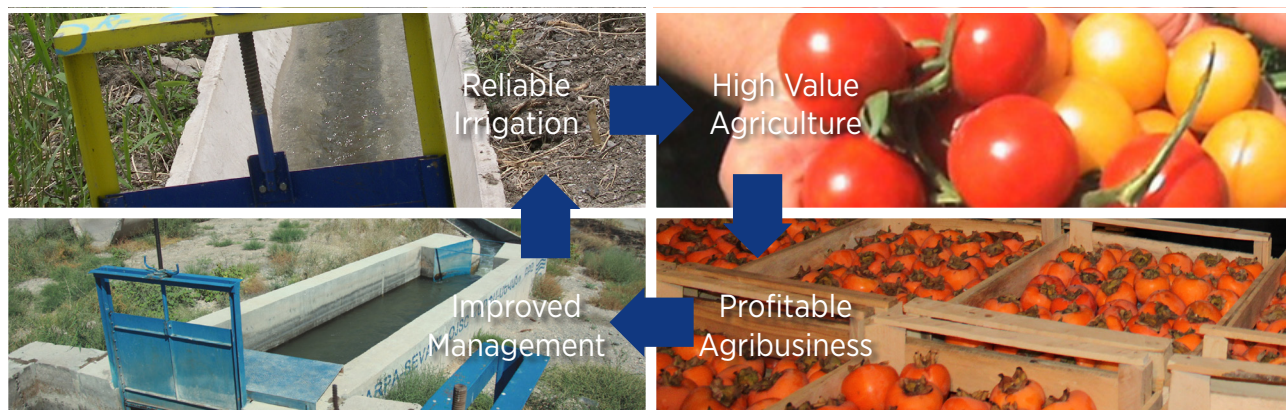
Compact Total\$177,000,000



- Monitoring & Evaluation
- Program Administration And Control
- Rural Road Rehabilitation Project
- Irrigated Agriculture Project, Water-to-Market Activity
- Irrigated Agriculture Project, Infrastructure Activity

As a result of post-election events in March 2008 that were inconsistent with MCC's principles promoting democratic governance and related declines in Armenia's performance on MCC's Ruling Justly indicator, MCC placed a hold on funding for the compact's Rural Road Rehabilitation Project. Excluding the remaining RRRP funds, MCC's investment is approximately USD 177 million.)

To learn more about results of MCC's investments in Armenia, visit www.mcc.gov/armenia



- ★ Rehabilitation of the Ararat Valley drainage system through cleaning 470 kilometers of canals.

The Water-to-Market Activity's achievements included:

- ★ Training over 45,000 farmers in on-farm water management techniques;
- ★ Training over 35,000 farmers in high-value agriculture techniques;
- ★ Establishment of more than 230 farmer demonstration sites;
- ★ Provision of technical assistance to over 225 agribusinesses, rural enterprises, and farmer groups;
- ★ Provision of training and equipment for 44 Water User Associations;
- ★ Development of more than 20 new refrigerated fruit and vegetable collection and consolidation centers;
- ★ Distribution of \$12.5 million of credit to over 1,000 farmers through existing Armenian banks and other financial institutions; and
- ★ Strengthening of 44 Water User Associations by installing accounting, budgeting, and Geographic Information System (GIS) software to effectively manage forecasts of irrigation water needs and the collection of water fees.

The Rural Road Rehabilitation Project included¹:

- ★ Rehabilitation of 24.5 kilometers of road in rural Armenia;
- ★ Improvement of road roughness by 78 percent; and
- ★ An increase in average daily traffic by 15 percent.

Over 420,000 Armenians are expected to benefit from the compact's Water-to-Market and Irrigation Infrastructure activities. **In 20 years, the acreage of land planted with higher-value crops is expected to increase by 21 percent, raising farmers' annual agricultural income 150 percent from a baseline of \$310. In total, increases in rural income are expected to reach nearly \$300 million.**

¹ As a result of post-election events in March 2008 that were inconsistent with MCC's principles promoting democratic governance and related declines in Armenia's performance on MCC's Ruling Justly indicator, MCC placed a hold on funding for the compact's Rural Road Rehabilitation Project. Excluding the remaining RRRP funds, MCC's investment is approximately USD 177 million.

For every \$1.00 of MCC investments, rural beneficiary incomes are expected to increase by \$1.69. This 22 percent rate of return represents a true sustainable investment. While the ultimate success of these investments is dependent on the continued efforts of the Government of Armenia and the Armenian people, it is expected that the increase in productivity of farm households through improved water supply, higher yields, higher value crops, and a more competitive agricultural sector will catalyze economic growth, improve food security, and reduce poverty in Armenia for decades to come.

Country Ownership

MCC's approach to country ownership means that country partners are in charge of prioritizing investments, designing and implementing programs, and taking responsibility for results. Millennium Challenge Account-Armenia (MCA-Armenia), the local Government of Armenia entity responsible for implementing the compact program, has worked together with MCC, other Government of Armenia agencies, implementing partners, and key stakeholders for five years to implement the compact to the highest possible quality and maximum impact, with a focus on sustainability. The compact program empowered the Government of Armenia and its people by enabling them to direct Armenia's own economic development.

In this spirit, the compact proposal was first developed by the Government of Armenia through broad-based public consultation. After the compact was signed in March 2006, the Government of Armenia's close engagement in the implementation process continued through the MCA-Armenia Governing Council. This oversight body, chaired by the Prime Minister and including leadership of key governmental agencies and elected civil society representatives, oversaw all key decisions of the compact program.

Irrigation Infrastructure Activity

Under the \$122 million Irrigation Infrastructure Activity, MCA-Armenia refurbished vital irrigation infrastructure across Armenia to provide the rural population with a more reliable supply of irrigation water, increase available farmland, and reduce the cost of operating irrigation systems. Agriculture is expected to become more profitable through a decrease in water and energy losses. As farmers gain confidence in water reliability and choose to invest in cultivating more profitable crops, yields and productivity will increase compared to before the investment. The project also provided a short-term boost to the local economy: During irrigation infrastructure construction, approximately 2,390 people were employed by MCA-contracted construction companies.



The Irrigation Infrastructure Activity improved 780 kilometers of irrigation canals, providing access to reliable irrigation for over 420,000 farmers, 40 percent of the rural population. Over the next 20 years, irrigation infrastructure improvements will result in 9,000 hectares of newly irrigated land, more reliable water supply for over 38,000 hectares of currently irrigated land, and improved drainage for about 10,000 hectares. In all, the MCC-funded investments will benefit approximately 37 percent of all of Armenia's irrigated land.

Rehabilitation and construction of five gravity systems	Rehabilitation of six main canals	Rehabilitation of the Ararat Valley drainage system	Rehabilitation of tertiary canals	Rehabilitation of 17 pump stations
<p>This rehabilitation will save electricity and provide stable water supply to benefiting communities.</p> <p>MCC's investment in rehabilitation of gravity-driven irrigation systems throughout Armenia is expected to result in annual energy savings of 9.3 megawatt-hours, worth \$525,000 in present value.</p>	<p>This rehabilitation will reduce water losses in main canals and improve water distribution in the irrigation system.</p>	<p>This rehabilitation will increase crop productivity in the drainage area, produce more arable lands, and better regulate groundwater levels, which will reduce water-logging in settlements in the Ararat and Armavir regions.</p>	<p>This rehabilitation will improve availability of reliable irrigation water sources to farmers that previously did not have reliable water sources.</p>	<p>The 17 improved pump stations include new, more energy-efficient pumps.</p>
<p>Construction of these five gravity-fed irrigation systems included almost 50 kilometers of canals.</p>	<p>Over 40 kilometers of new canal lining were refurbished and over 260 water structures were installed.</p>	<p>This rehabilitation included cleaning 470 kilometers of canals.</p>	<p>Approximately 220 kilometers of tertiary canals were rehabilitated across approximately 100 communities.</p>	

Before and After Pictures for the Irrigation Infrastructure Activity

Shenik Gravity Scheme



Before



After

Arzni-Shamiram Main Canal



Before



After

Armavir Main Canal



Before



After

Voroton-2 Pumping Station



Before



After

Norabats Tertiary Canal



Before



After

Artesian Well (potable drinking water)



Before



After

Water-to-Market Activity

The \$33 million Water-to-Market Activity complemented the Irrigation Infrastructure Activity by instituting and improving mechanisms to ensure long-term sustainability. The Water-to-Market Activity was designed to increase productivity of farmers, agribusinesses, and water supply institutions through a combination of training 45,000 farmers and providing technical assistance, access to credit, and essential equipment ranging from computers to tractors. Increasing productivity of Armenian farmers will generate higher incomes and reduce poverty. As incomes grow, farmers will be more able to afford the water fees necessary to properly maintain and operate the rehabilitated irrigation system and the growth in productivity will drive sustainability.

The Water-to-Market Activity will improve access to credit, increase on-farm water management and high value added practices, and improve cost recovery for Water User Associations.

Access to Credit	Farmer Training and Development	Collection/ Consolidation Centers and Enterprise Assistance	Support to Water User Associations and Water Supply Agencies
<p>Over \$8.5 million was disbursed in loans to support agricultural activities of over 760 farmers trained by the MCC-funded program. These farmers then invested in greenhouses and freezing facilities (67 percent) and orchards/vineyards (16 percent), among others agricultural investments.</p> <p>Repaid loan funds are currently being lent again; so far, an additional \$4 million has been lent to over 260 farmers. In 20 years, over 3,000 farmers are expected to have received loans from this program.</p>	<p>Over 45,600 farmers (32 percent women) from over 400 Armenian rural communities received training in on-farm water management. 36,000 of those farmers (34 percent women) received training in high value agriculture practices through classroom and on-site practical sessions.</p> <p>By the end of the compact, 16,800 farmers (20 percent women) adopted new on-farm water management techniques, such as modifying furrow sizes or installing small gates to improve water flow.</p> <p>Over 230 demonstration sites were established across Armenia.</p>	<p>Post-harvest, processing and marketing assistance was provided to 227 enterprises and farmer groups. Part of this assistance resulted in the creation of 24 collection/consolidation centers across Armenia providing farmers with opportunities to store, sort, and sell their produce in appropriate conditions closer to their land plots, without the transportation costs required to get to markets or use of market intermediaries.</p> <p>80 percent of the 227 enterprises assisted are implementing at least one improvement learned through the assistance, such as improved production inputs or better identification of marketing opportunities.</p> <p>MCC also invested in 94 farmer groups, creating sales opportunities and linking groups to canneries, exporters, wholesalers, and retailers.</p>	<p>All 44 Water User Associations across Armenia received technical assistance to develop and implement Management Improvement Plans. In addition, they received improved water management tools, including 180 computers with sophisticated budgeting, accounting and GIS software. Forty-four units of welding equipment and 38 back-hoe loaders provided to the WUAs will significantly increase efficiency of their maintenance operations.</p>

Under the Water-to-Market Activity, farmers were taught new irrigation technologies and techniques to enhance irrigation efficiency. They were also trained in investing in higher value agriculture as irrigation systems become more reliable.

More than 230 demonstration sites have been set up in every region of Armenia to showcase these advanced irrigation technologies and high value agriculture practices. These sites serve as learning centers, providing farmers with access to hands-on training in best practices in agriculture outside the classroom. Moreover, the MCC Armenia Compact improved efficiency by linking small farmers to larger agribusinesses. These agribusinesses sort, package, and market farmers' improved agricultural products, creating higher value goods and, ultimately, increasing agricultural exports.



A beneficiary showcasing her demonstration site



Meghri Collection Center



An Armenian farmer's MCC-funded greenhouse

Prior to the MCC compact investment, post-harvest handling in Armenia, such as sorting, grading, and packing agricultural products, was limited to very basic operations. In most places, post-harvest handling did not include cooling, which is essential to maintaining fresh produce. In recognition of this barrier to economic growth, MCC supported the development of collection and consolidation centers as important intermediaries between farmers and retailers, wholesalers and exporters. In these facilities, farmer produce is stored, sorted, packaged, and then sold. The compact investment funded the installation of cooling equipment and insulation essential to these facilities' success. Furthermore, MCA-Armenia trained users in proper operation and maintenance of the facilities, including correct refrigeration and storage regimes, use of adequate packaging materials, and food safety and hygiene requirements.

The Water-to-Market activity has also achieved major improvements to Armenian irrigation sector policy. Changes in the Republic of Armenia water code include legislative amendments to applied taxes, management of irrigation systems, and legal status of Water User Associations, all of which are designed to improve the efficiency of the irrigation sector and improve the operation and maintenance of MCC-financed irrigation assets. This legislation will further supplement the sustainability of MCC's investment in Armenia.

The Water-to-Market activity also enhanced the institutional capacity of irrigation system management entities: Water User Associations (WUAs) and Water Supply Agencies (WSAs). This assistance focused on promoting sustainable maintenance of rehabilitated infrastructure through improved delivery of irrigation water to consumers, as well as increasing the efficiency of irrigation service fee collection necessary to fund the system's long-term operation and maintenance.

The Water-to-Market Activity provided WUAs and WSAs, whose core responsibilities are to provide reliable access to water to farmers at a fair price and to operate and maintain the irrigation system, with extensive technical assistance, new office equipment, software and other water measurement and management devices and machinery. The resulting improved office environment in WUAs, along with increased education of WUA members and staff, will have a prolonged positive effect on the efficiency of Armenia's irrigation system management entities.

Thanks to the MCC-funded technical training, WUAs can better manage Armenia's irrigation systems. Efforts by the Government of Armenia, supported by MCC, have helped raise the collection of water fees from 51 percent of users in 2008 to 69 percent in 2010. This increase is expected to result in WUAs' ability to cover 60 percent of costs with user revenue in 2011, up from 37 percent in 2007.

By enhancing institutional capacity of these entities, compact-funded rehabilitated infrastructure will be maintained for years to come. Ultimately, these interventions will ensure sustainability of MCC's investment and reduce the need for government subsidies.

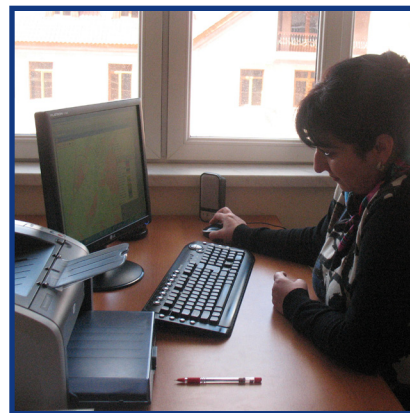
More Results to Come

MCC applies a rigorous methodology to monitor projects and measure the cost-effectiveness of investments. Monitoring and evaluation of the Armenia Compact is ongoing, and impact evaluations will occur after compact activities conclude. MCC has hired independent organizations to conduct thorough evaluations on all compact activities included in the Armenia Compact. These evaluations help explain what might have happened without MCC's investment and help identify how MCC's contribution reduced poverty. Furthermore, MCC will measure the changes in household income and well-being that result from the Armenia Compact program.

The impact evaluation of the Irrigation Infrastructure Activity is an essential component of the Armenia Compact. In particular, a comprehensive impact evaluation has been designed to analyze the impact of tertiary canal improvements on changes in cropping patterns and agricultural profitability; the evaluation compares beneficiary communities with very similar communities who did not receive canal improvements. The final impact evaluation will assess how the Irrigated Infrastructure Activity has improved household well-being in Armenia, and will be available in early 2014.

Evaluations were also designed for all components of the Water-to-Market Activity. The impact evaluation of farmer training is especially noteworthy, since it used a random assignment of communities to roll out the training across Armenia. In this evaluation, baseline data was collected in 2007 and 2008 through a Farming Practices Survey. Then, just before the last group of farmers was scheduled to be trained, follow-up data was collected. This last group will be compared to the farmers who received training early in the compact to estimate the impact of training on adoption and agricultural profitability. The final impact evaluation will assess how the Water-to-Market Activity has improved household well-being in Armenia, and will be available in early 2012.

To learn more about MCC's impact evaluations, please visit www.mcc.gov/impacteval.



Geographic Information System (GIS) User at a Water User Association office in Armenia

Rural Road Rehabilitation Project

The goal of the Rural Road Rehabilitation Project was to ensure that every rural community in Armenia has essential road access to markets, social services, and the main road and interstate network. In addition, the compact program funded a technical audit of ongoing maintenance contracts and a strategic road maintenance plan.

Improved road conditions have contributed to a significant decrease in travel time. In addition, vehicular activity on the road increased following the improvements, and public and private transportation options, such as taxis, are more readily available.

The \$8.4 million Rural Road Rehabilitation Project rehabilitated 24.5 km of road for reduced transportation costs and increased vehicular activity.

Road roughness was improved by 78 percent.	Average daily traffic increased 15 percent, from approximately 640 to 740 vehicles.	Improved roads are expected to generate \$9.2 million in transportation cost savings and a decrease in travel time valued at \$800,000.
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Before



After

All countries with signed compacts, including Armenia, are expected to maintain and improve good performance in policy areas measured by MCC’s selection indicators. Since 2007, Armenia has experienced declines in the Ruling Justly category of the indicators. This category includes indicators focusing on good governance, such as political rights, civil liberties, control of corruption, and rule of law. As a result of these declines and post-election events in March 2008 that were inconsistent with MCC’s principles promoting democratic governance, MCC placed a hold on funding for the compact’s Rural Road Rehabilitation Project.

Although MCC's involvement in the rehabilitation of Armenia's road network ended, MCC's initial investments in the transport sector had a significant impact on rural populations. Prior to the operational hold, MCC rehabilitated 24.5 kilometers of road and completed feasibility and design studies for more than 570 kilometers, some of which were taken over by the World Bank for construction. By the end of 2011, the World Bank will have completed 150 kilometers of road rehabilitation using MCC-funded designs. Successful donor coordination between MCC, the World Bank, and other donors will help the Government of Armenia provide rural communities with essential road access to markets, social services, and the main road and interstate network.

Even though MCC did not rehabilitate all of the planned roads, impact evaluations will still be carried out on the portions completed by MCC and by the World Bank. The evaluation compares communities with road improvements to similar communities without road improvements to estimate changes in travel time, changes in agricultural production, and other social benefits. Because a significant portion of MCC's investment around the world is in road infrastructure, MCC believes it is important to understand the impact of rural road rehabilitation in all circumstances.

Insight into Implementation

MCC is a learning institution. Outcomes of MCC projects—both positive and negative—will be rigorously and transparently evaluated to improve effectiveness, enhance development practice, and keep the U.S. Government at the forefront of development efforts. MCC and partner countries work together to identify and address implementation challenges, both to keep current investments on track and to inform the design and implementation of future MCC investments. Insights from implementation in Armenia that have strengthened MCC's approach to development include:

A compact focused on helping one specific sector has concentrated results: Due to the Government of Armenia's focus on the country's agricultural sector, the compact was able to bring about significant improvements across the sector on a national scale. Approximately 35 percent of the population lives in rural areas and is dependent on semi-subsistence agriculture. By focusing on an integrated approach to sector development through rehabilitating infrastructure, training farmers, improving maintenance and sustainability mechanisms, and providing credit for agricultural activities, the Government of Armenia was able to address the agricultural sector in its entirety, rather than addressing only individual components.

MCC will act on its commitment to the principles of democratic governance: As a result of events surrounding the March 2008 elections, which were inconsistent with MCC's principles of democratic governance as measured by MCC's Ruling Justly indicators, MCC placed a hold on funding for the compact's Rural Road Rehabilitation Project. This effectively reduced the original \$235.65 million compact to approximately \$177 million. Through the experience of the Armenia Compact, MCC proved its ability to make tough decisions when poor performance warrants action and, as well, its ability to carry out the programmatic impacts of those decisions.

Sustainability of Impacts

Policy Reform	Irrigation: The Armenia Compact has achieved major improvements to Armenian irrigation sector policy. Changes in the Republic of Armenia water code include legislative amendments to applied taxes, management of irrigation systems and legal status of Water User Associations, all of which are designed to improve the efficiency of the irrigation sector and improve the operation and maintenance of MCC-financed irrigation assets.
	Roads: The Rural Roads Rehabilitation Project stimulated the implementation of the Road Lifeline Network concept, which the Government of Armenia utilized as justification to formally mandate provision of operation and maintenance services to over 2,700 kilometers of roads. This mandate was key in facilitating farm-to-market linkages. Prior to MCC involvement, none of these 2,700 km of rural roads in Armenia were eligible for Government of Armenia Operation and Maintenance expenditures. The investments by World Bank and other donors, including the Asian Development Bank, also benefit from this MCC achievement.
Sustainability-Strengthening Irrigation System Entities	MCC funding has been instrumental in building management and technical capacity of Armenia's 44 Water User Associations. This was achieved by supporting organizational reforms, building administrative and operation capacities of WUAs and Water Supply Agencies, along with development and enforcement of water and irrigation-related legislation. Building capacity will improve irrigation services for all WUA members, even those not directly receiving training or improved infrastructure under the compact.
Adoption of improved construction technology leads to better-quality infrastructure	In the Irrigation Infrastructure Activity, MCA-Armenia contractors piloted and successfully introduced water management structures into canal systems, greatly improving the availability of water to farmers. In addition, MCA-Armenia contractors introduced "shotcrete" technology, which has reduced construction costs and resulted in higher quality, more durable repaired canals. Several local construction firms are trained in water management structures and "shotcrete" techniques to carry out future irrigation system repairs.
Donor coordination multiplies and strengthens MCC's investment	Throughout compact implementation, MCC and MCA-Armenia partnered with the World Bank, USAID, USDA, Oxfam, and other donors to coordinate investments in Armenian infrastructure development, capacity-building of rural farmers and businesses, data collection for monitoring and evaluation, and strengthening the institutional framework in the agricultural sector.
Resettlement Action Plan "Best" Practices	MCC and MCA-Armenia developed Resettlement Action Plans (RAPs) in advance of the Rural Road Rehabilitation Project. Although the project was not carried out to its conclusion, this represented the first time ever that a RAP in compliance with World Bank and MCC standards was implemented in Armenia. The Government of Armenia committed funds to develop RAPs and ensured the works were well coordinated on all levels—from the community level to the regional level to the national level.
Integrated Survey of Living Standards (ISLS)	Under the MCC compact, the capacity of the country's National Statistical Service was greatly improved, resulting in more expansive and accurate calculations of poverty levels in the country. Specifically, MCC has funded the Integrated Survey of Living Standards since 2007. These statistics are published in a signature document called "Armenia: Social Snapshot and Poverty," which is widely used by the Government of Armenia, donors and NGOs in Armenia.
Greater participation in the financial sector	Through provision and careful monitoring of the compact's \$8.5 million agricultural credit funds, the compact program helped introduce new markets to local banks. More than 79 percent of compact-funded loans were made by Universal Credit Organizations (UCOs), small lenders that are important players in rural areas and compete with Armenian banks. The credit program helped build both the lending base and the capacity of UCOs. High loan repayment rates to date and the Government of Armenia's desire to continue the credit program after the compact ends reflect successful program design and implementation.

Looking Forward

Post-Compact Term Program Management: The Government of Armenia will establish a small but permanent Project Management Group (PMG) at the Ministry of Finance to manage MCA-Armenia assets and monitor sustainability of MCC's investment over the next five years. Continued credit program implementation and oversight of possible repairs required of irrigation infrastructure works contractors will be largely funded from interest revenue generated by the Water-to-Market credit component. The project management unit managing daily operations of banks and other credit providers under the compact's credit program will also continue to operate. Additionally, ongoing policy reform will help consolidate the sustainability of MCC's investments in Armenia.

Operations and Maintenance: The State Water Committee of the Ministry of Territorial Administration will be responsible for operation and maintenance of irrigation structures. The new equipment contained in the 17 rehabilitated pump stations represents new operation and maintenance challenges. Based on site-specific operations and maintenance manuals developed by contractors, local operators have been included in the construction process and trained on the new equipment in order to ensure that the pump station investment lasts for years to come. The State Water Committee is also considering working with private firms to enhance long-term maintenance.

Private Sector Synergies : Armenia's capacity to store and export fruits and vegetables is expanding rapidly, through both MCC-funded collection and consolidation centers and new, privately funded transportation and cold storage facilities. Over time, MCC's investments in irrigation infrastructure and agricultural assistance are expected to be maximized and further developed by private sector firms, which rely on small farmers to deliver high quality produce for export and domestic consumption.



Spayka trucks transporting and exporting Armenian farmers' produce across the country and Armenia's borders



Zvartnots Airport Cold Storage Facility

MCC's Integrated Development Approach

Margarita Grigoryan is a poor farmer with a small parcel of land in the rural town of Khoronk, in the Armavir region of Armenia. Like many Armenian farmers, Margarita and her family have lived on her agricultural income of approximately \$1,000 per year for the last 15 years.

Margarita and her neighbors' three-kilometer canal, now rehabilitated, is just a small segment of approximately 220 kilometers of tertiary canal that have been rehabilitated under the MCC compact in almost one hundred communities. Today, Margarita can plan her growing season more effectively: when she submits her water request with her WUA, she has confidence that her farm will receive an appropriate amount of water on a predictable schedule.

MCC's holistic approach to agricultural sector development incorporates farmer training alongside infrastructure improvements. Margarita and over 45,600 other farmers in Armenia (32 percent of whom were women) have benefitted from farmer training in advanced agricultural practices



Margarita Grigoryan

Under the credit facility, MCA-Armenia provided loans to local banks and credit organizations, which in turn provided small loans at reasonable interest rates to 760 farmers across Armenia, all of whom had been trained under the compact program. Margarita received a \$13,500 loan over a five-year period with a 10 percent interest rate, terms she considers some of the best available to farmers, to buy the materials for a greenhouse. In her new greenhouse, Margarita is now growing cucumbers in the spring and green beans in the fall, doubling her annual crop production.

Repaid loan funds are now being lent out again; so far, an additional \$4 million has been lent to over 260 Armenian farmers. In 20 years, it is expected that over 3,000 farmers will receive loans from this program.

These investments in agriculture have resulted in substantial income increases for small farmers. Today, Margarita is making close to \$8,000 per year from her new irrigated fields and an additional \$2,000 from her new greenhouse. Margarita's income increases have made it possible for her to provide for her family and to continue to reinvest in and grow her business.²

Of course, not all participants experienced the same income gain, but across the MCC-funded project, approximately 105,000 beneficiary households are expected to experience an average 150 percent increase in their agricultural incomes from a baseline of roughly \$300 per year.

² Margarita benefitted from several MCC-funded activities and her income gains are not expected to be representative of average income gains as a result of MCC's investments.