

## **Introduction**

The Armenian Technology Group, Inc. is a California Based 501© 3 non-profit, public benefit corporation and a Private Volunteer Organization, (PVO) registered with US Agency for International Development. ATG has two field offices outside of US, one in Armenia and the other in Nagorno-Karabakh, once an enclave in the former Soviet Republic of Azerbaijan.

The mission of the Armenian Technology Group, Inc (ATG) is to assist the people of Armenia to move towards food and agricultural self-sufficient and providing wholesome food to its population. In addition, ATG provides support to Armenia in rebuilding its economy infrastructure and assisting the private farmers during the transition toward free market economy.

Central to ATG's mission is the belief that a strong private farming sector is the foundation for building a healthy free market economy. ATG advisers and technicians work hand-in-hand with the private farmers in cooperation with Ministry of Agriculture (MOA), ATG has focused on providing Armenian farmers with the benefits of Armenia agricultural techniques and innovations. At the same time, the organization has begun a grass organization to cultivate the business and management skills necessary for success in modern agriculture.

The collapse of the Soviet Union and its economic infrastructure had forced a significant percentage of the country's population (over 60%) to be involved in agriculture in order to survive. ATG has focused on helping these newly private farmers to feed themselves and their families by providing them employment and the means to help elevate them from poverty level to a more dignified living standard.

ATG carries out several activities and projects to help the needy subsistence farmers and other segments of the population who are less fortune. The projects that ATG undertakes have long term economic prospectus. They are geared toward providing employment, increase production, generate income, and thereby living a lasting impact on their lives.

## Overview

### **Present agricultural situation in Armenia**

One of the objectives of the ATG is to assist these farmers through Seed Multiplication Program in generating wheat and seed wheat in Armenia by working toward producing as much wheat for local consumption as possible. Wheat is a major staple of the Armenian diet. More than 70% of the wheat and cereal consumed in the Republic of Armenia is imported. Cereal production is a great importance in Armenia, but the country has never been self-sufficient in it. Each year more than one million metric tonnes of cereals are imported, including 350,000-450,000 tonnes of edible wheat and 500,000-600,000 tonnes of feed.

The decades of suffering the people of Armenia were subjected to in during the 20th century, through the genocide and Soviet occupation was challenging to the new republic to cope with during its first decade of Independence. The economic blockade imposed on her by its neighboring countries has made the situation worse. To reduce this economic pressure and help feed the people in the country, ATG established a Seed Producers Association (SPA), and through its Seed Multiplication Program (SMP), trained the local private farmers to produce Foundation, Registered and Government Certified seed to help the farmers grow their own production wheat to meet the wheat consumption of the country.

During this fiscal year ATG provided technical assistance in the fields of agriculture and agricultural technology through transfer of knowledge in educational, scientific, humanitarian, and charitable programs to achieve its goals. ATG's advisers work closely with private farmers, local non-governmental organizations, as well as with United States Department of Agriculture (USDA), Ministry of Agriculture (MOA), United Nation's World Food Program (WFP) and US Agency for International Development (USAID).

ATG projects include research and training of a new class of farmers in applied science through planting trial plots of new varieties of wheat, alfalfa, sainfoin, lintel, chickpea, and green beans.

ATG's Seed Multiplication Program is being carried out through private farmer's organization of its Seed Producers' Support Association (SPSA). SMP includes seed harvesting, reproduction and processing, storage and transport of wheat, farm equipment, manufacturing modification and repair of farm machinery, etc.

ATG's Grape Nursery and vineyard rejuvenation projects are two other programs that are providing jobs and helping generate income to the deprived rural communities who had suffered during war. These two related agribusiness industries have become vital source of livelihood of the local population who had lost 80% of their homes and belongings during the recent several years of the Karabakh conflict. The nursery and the grape projects employ 35 to 60 people on a regular basis, where the vineyard rejuvenation activities benefit over 25,000 farm families, that otherwise will not have little to survive on.

The construction and distribution of beehives is yet another program that is geared toward helping generate income to the widows and the victims of the conflict. The total number of the beneficiaries exceeded 300 families. Each family received about 10 multilevel beehives that ATG had contracted to be constructed locally. The families extracted the honey for their own use, sell to generate income, and donated 5% of their harvest back to their communities for charitable giving.

ATG continued its direct humanitarian distribution of assorted varieties of over 8,000 kg of vegetable seed to needy 19,898 families during the current fiscal year. ATG has been distributing donated vegetable seed to the needy since 1995.

ATG started the soil amelioration project of 60 acres land in Sis refugee Village and helped the 2060 member village to grow their own food and feed their families.

### Highlights of the ATG Activities Report

ATG fiscal year ending April 30, 2002 was one of the most challenging years. Through hard work and dedication to our mission, the project undertook the responsibility of providing technical assistance and educational assistance to the farmers of the Republic of Armenia and Nagorno-Karabakh.

ATG specialists provided necessary assistance to the Armenian farmers in seedbed preparation, quality control, processing and in other techniques for wheat seed, alfalfa and sainfoin planting. ATG specialists were involved in various educational seminars and field demonstrations, whereby local farmers had opportunity to talk about problems, to exchange ideas and experiences with each other.

In its first year of production, the Grape Nursery in Khramort produced 18,758 *phylloxera*-resistant grape plants, which were planted by the local farmers to rejuvenate their vineyards.

In addition, ATG...

- compiled a wheat farmer's data bank from the program participants.
- distributed 8000 kg of vegetable seed free to socially vulnerable people in Republic of Armenia and Nagorno-Karabakh particularly. ATG also provided seed to Ministry of Agriculture, WFP, Norwegian Relief Council, and other organizations to help with distribution. The number of beneficiaries during this fiscal year alone was 19,898.
- assisted the SMP farmers in producing and providing technical assistance in the planting of 50 hectare of US varieties of foundation winter wheat seed.
- purchased 130 MT of fertilizers and 630 Liters of herbicides for the 2001-2002 winter wheat for Seed Multiplication Program farmers.
- set up test plots for "Corn" and "Sudan" grass seed to assist USDA programs.

- provided chickpea and lentil seed to the Center of Selection Achievements Experiment and Protection to test. ATG financed research plots for 6 American bean varieties for "ARGO" Extension Agricultural Academy of Republic of Armenia.
- started soil melioration project of 60 acres in Sis village refugee site. World Food Program provided food to the Refugees working on the project.
- began implementing winter wheat seed marketing project through the SPSA farmers, in order to help the seed producing farmers sustain the project.
- provided humanitarian assistance by providing seeds and educational supplies to "Zatik" orphanage, "Meghvik" youth educational center and Zovasar community.
- donated beehives to the Cosmic Ray Division of Yerevan State University Physics Department staff and scientists located on Aragadz Mountain, to use the extracted honey as part of their diet and a source of supplementary income.
- distributed 573 beehives and 125 temporary hives to victims of Karabakh conflict.
- distributed 3500 lb. of honey produced and donated by Honey Bee program beneficiaries to other needy families, orphanages, regional and children's hospitals, refugees, kindergartens, invalid children, and nursing homes.
- provided flower seed and lawn grass seed and participated in the Yerevan City Beautification Project.

### **ATG accomplishments in the 2001-2002 production year**

During this period ATG through its project farmers implemented winter wheat, spring and winter barley seed production, established alfalfa and sainfoin seed fields, American bean varieties experiments and marketing projects, that included 21 regions of the Republic.

In fall/winter 2001 ATG and SMP project farmers harvested, cleaned, processed and helped farmers plant certified wheat seed in the amount that was enough for 34,000 acres, which is 13% of Republic's annual plantings. This project had 109 beneficiaries (project participants); average yield per hectare was 3.3 MT, where, seventeen participants of the project averaged 5-7 MT yields per hectare. This amount represents a net increase of over 450% yield per hectares.

Nine farmers in 2001 planted 32.6 hectares winter barley and harvested 132 MT gross yield or 27 MT pure seed (enough for 180 hectares). Three project farmers planted 17.2 hectares of spring barley in 2001, and harvested 30 MT gross yield or 20 MT pure seed (enough for 133ha).

	<b>Acres Harvested</b>	<b>Total Seed Harvested</b>	<b>Total Seed Cleaned, Processed, Certified</b>	<b>Acres Planted</b>
<b>Wheat – Fall 2001</b>	1990 acres	2835.50 MT	2050 MT	34000 acres
<b>Barley – Fall 2001</b>	75 acres	132 MT	27 MT	450 acres
<b>Barley – Spring 2001</b>	45 acres	30 MT	20 MT	330 acres

In 2001 six "Alfalfa" and "Sainfoin" project farmers in two regions (Akhouryan and Amasia) established 22.3 hectares of seed fields with Viking alfalfa and Eski sainfoin varieties, which will be harvested in 2002.

Besides above-mentioned projects, ATG distributed 8000 kg of different kind of vegetable seeds to vulnerable 19,898 people free of charge all over Armenia and Karabakh.

### **Education, Research, and Testing**

Educational seminars were held in each of the ten Marz (regions) to inform the farmers and agronomist of field inspection and the marketing program that ATG proposed to farmers. The staff agronomist informed the participants about new regulations concerning field inspections and laboratory tests for quality control that all seed must pass before marketing.

ATG planted test plots of each variety to validate yields. The varieties are planted in replicated trials so the data can be analyzed and submitted to Ministry of Agriculture. The replicated trials are planted with currently recognized variety planted by farmers and new ATG planted varieties.

ATG has maintained a research effort for applied science and for cultural practices since 1996. The International Wheat and Maze Improvement Organization, CIMMYT, provided ATG with two hundred seed variety entries. ATG selected five winter wheat seed varieties, which are in advanced testing in farmer's fields. The Ministry of Agriculture is asked to certify two or three varieties for release. The new releases will have the name and number of the seed to indicate the ownership of the variety. Two of the new varieties can either be planted as a spring or winter wheat. ATG has also conducted a small test program for barley.

Seed production fields for Wheat, alfalfa, Barley, Sainfoin, Corn, Sudan grass, Chickpeas and Lentils were planted under contract with private farmers on nine different locations on a total of 150 acres. A field day was held to show US Embassy, USAID, USDA, UN, NGOs and agronomist and farmers our work. This was an attempt to determine to the SPA farmers to contract Foundation seed planting with farmers. ATG varieties have been increased to farm production levels.

### **Sis Village Refugee Project**

ATG is assisting the "Sis Non Governmental Charitable Organization" with soil reclamation and revival of the Sis Village lands. The organization is located in the village of Sis. The inhabitants of which are mainly refugees from Baku. As a result of the location, the villages face many difficulties in adaptation to the new agricultural environment. There are no functioning enterprises in the community. The only means of earning a living is the cultivation of individual plots, which doesn't bring enough income to meet the minimum living needs. The low fertility of the land in the village puts the only means for living under question.

Sis-Revival of Lands is part of a bigger project, which is called AGAP (Agricultural Products). ATG in cooperation with UN-Work For Progress is supporting the Sis-Revival of Lands, which is presently in progress. The project includes melioration of 150 hectares agricultural lands (the major part of agricultural fields in the community) cleaning of salty-alkaloid land from salt. A more fertile land will emerge after melioration.

ATG designed and developed the project and allocated \$84,000.00 for the Sis village melioration project. ATG is administrating the project, where WFP has provided food for work to dig drainage ditches. ATG purchased drainage lines and associated materials to cover and install 34 acres of drainage lines. A 3000 gallons per minute artesian well was developed that provides a high quality source of fresh water to use for leaching of the salts and raising of crops. This is enough water to properly irrigate and leach 120 hectares of soil to prevent salt build up. The irrigation with fresh water helped reduce the soil pH, which recorded over 8.0 before irrigation, has been reduced to an average of 7.5.

ATG purchased a new 52-hp tractor, plow, drill, mower, and cultivator for the Sis Village refugees. ATG will continue developing an additional 27 acres with private funds and turn over to the village refugees for their use. The soil is being prepared to plant the first crop of Sudan grass. The Sudan grass produces an acid soil reaction during its growth, which helps reduce the soil pH. This first crop will either be used for SMP or used for forage for the village cows thereby increasing their milk production.



## Overview of Results

This year ATG and its field offices cooperated with Sis Benevolent Organization, a refuge village to help the community to use the agricultural lands that they have and help the young people is able to earn a living in the village rather than leave the village. World Food Program is a partner in this project.

ATG demonstrated to USDA cooperators in Green Bean and Corn seed project to determine maturity date for grain corn for possible alternative crop for farmers. Corn can be used for the chicken industry and possible hog operation. Sudan grass could be used for Sis village dairy program and for USDA goat project.

ATG provided vegetable seed to 19,898 vulnerable persons. ATG also worked directly with woman's groups to help them increase their income. Director Roger Benton spoke at two of their meetings.

ATG cooperated with Center for Selection Achievement. All of the crops that we grow are tested and certified through this department in the Ministry of Agriculture. Weston, W-301, and Stephens winter wheat have been awarded certificates of acceptance. Currently we are working to have Eltan winter wheat, Viking alfalfa, and Eski sainfoin certified. The Center asked ATG to import lentils and chickpeas for testing. We currently have these crops under test.

We have increased the amount of Foundation seed produced and have begun a Breeders seed program. This will allow the SMP to raise all of the seed in Armenia with the need of importing new Foundation seed from the US. ATG will carry on a research program to keep current with new developments, and share the results with the farmers.

All of the seed that ATG produces through its Seed Producers Association farmers is coded and information is available on all bags. We follow the rules of the Ministry of Agriculture so farmers can identify seed lots and have germination data at time of purchase.

ATG provides production year credit for fertilizer and herbicide to SMP farmers; this form of credit

helps the farmers to increase yields by reducing weed growth and nitrogen to stimulate plant growth to increase yields.

ATG has established good American seed varieties, introduced improved cultural practices and shared information with the Agricultural Academy that wheat, barley, alfalfa, and sainfoin can come from other regions of the world that are superior. ATG technical advisors have also demonstrated to the local agronomists that there is shorter time of adaptation of new seeds.

Humanitarian aid efforts provided via vegetable, corn, grass, flower seeds, have provided much needed inputs, beneficiaries appreciated this. ATG has provided loans for inputs that helped farmers do a better job of raising seed.