



## EFFECTIVE GREENHOUSE MANAGEMENT



Greenhouse agriculture in Armenia covers more than 300 hectares, and has developed greatly in the last 5 years. More intensive development has been observed in the last 5 years, partly due to Millennium Challenge Account (MCA) credit. In Armenia, more than 1,000 greenhouses are privately owned and the average greenhouse measures approximately 875 sq. m. The greenhouses are mainly concentrated in the Ararat and Armavir regions.

The average productivity of greenhouses that produce vegetables is judged to be very low, at about 10 kg per sq. m over the whole season.

The productivity depends greatly on the length of the season, and also on the seeds used, the quality of the seedlings, the nutrition and health of the plants, and the availability of good technical support. The Effective Greenhouse Management project financed by the USDA Foreign Agricultural Service (FAS) Caucasus Agribusiness Development Initiative (CADI) supports farmers in prolonging the cultivation season and improving cultivation with new insights, utilizing new high production varieties, improving plant nutrition and plant health, introducing drip irrigation, improving heating systems and providing energy saving ideas.

CARD has initiated a training program for young post graduate students and agronomists from the Armenian State Agrarian University (ASAU) to learn new techniques and technologies in greenhouse cultivation, and to help them become experts and provide services to private industry.

Farmers are unhappy with the increasing cost of energy, specifically natural gas for heating. Heating costs will continue to rise and this is unavoidable. To overcome this problem, CARD through the USDA FAS CADI Efficient Greenhouse Management initiative is implementing activities to improve the efficiency and to increase productivity which will lead to increased income and sufficient cash to cover energy costs.

## INVOLVEMENT OF POSTGRADUATE STUDENTS IN GREENHOUSE MANAGEMENT



To prepare young specialists in the field of Greenhouse Management, CARD has decided to involve

postgraduate students from the Armenian State Agrarian University (ASAU) in its training sessions that are a part of the USDA-supported greenhouse management development initiative.

For this goal, CARD invited several foreign experts from renowned companies, such as **PUM Senior Experts Netherlands, STEP Systems GmbH, and Rijk Zwaan**, to conduct seminars and on-site consultations for ASAU postgraduates, greenhouse association members, and greenhouse owners from the Ararat and Armavir regions.

The first training session, a total 4 seminars, was con-





ducted by the agronomist from PUM Senior Experts, Ms. Lidwine Dellaert, who presented a number of topics on greenhouse farming and provided solutions to several issues that were pressing local farmers.

As part of this training session, multiple visits to local greenhouses were organized and on-site consultation was provided to more than 10 large greenhouses. The visits were also accompanied by the students and this was their first visit to greenhouses with indoor vegetable cultivation.

As a result of Ms. Dellaert's visit, 10 greenhouse owners and 15 ASAU students were trained in Tomato Cultivation and Pest and Diseases, Greenhouse Management and Fertilization, and Integrated Pest Management. A number of issues were revealed and solutions were provided.

In addition, with Ms. Dellaert, a program to develop greenhouse management was elaborated.

**PUM** Netherlands senior experts

## INTRODUCTION OF NEW GREENHOUSE FARMING TECHNOLOGIES



For the first time in Armenia, CARD has introduced the LASA Agro modern portable laboratory to enable farmers to conduct soil, water and nitrate tests reliably and quickly in their greenhouses. The portable laboratory will help Armenian greenhouse farmers increase their production and efficiency, and is under the auspices of the USDA-funded "Effective Greenhouse Management" project. Beginning in June, as part of the project, a specialist from a German-based company STEP Systems GmbH, Mr. Pavel Shishkin, was invited to Armenia to conduct training on the use of the mobile laboratory.

The training was held on CARD premises and in the fields with the participation of young agronomists from Armenian State Agrarian University, greenhouse owners from the Ararat and Armavir regions, and CARD specialists.

The portable laboratory will be placed in Armen Simonyan's trial plots in Darakert village, in Ararat marz, where the majority of farmers are involved in greenhouse farming. Mr. Simonyan, a fairly sophisticated greenhouse owner, has extensive experience in vegetable production and greenhouse farming.

He, along with the young agronomists, will provide consulting and mobile laboratory services to more than 300 farmers in the region by applying the "farmer to farmer" model for knowledge exchange.



The regular use of this laboratory will provide quality assurance for greenhouse production. Farmers will be able to perform regular checks of nitrates in soil, water and plant tissue samples which will ensure reliable production of vegetables, and in turn resulting in greater agricultural yields through more precise fertilization.





STEP Systems GmbH, an innovative company, deals with the development, production and distribution of portable analysis systems and tools, specially designed for the application of soil, water and air testing and monitoring. Long and extensive experience in the field of horticultural and agricultural soil and water analyses has made STEP Systems the leading company in this field.



## NEW TOMATO VARIETIES FOR GREENHOUSE PRODUCTION



Tomato Seeds, CARD hosted two specialists from Rijk Zwaan, Sergiy Vasylevskyy and Andrii Galaguria. During their stay in Armenia, Mr. Vasylevskyy and Mr. Galaguria conducted a seminar in Darakert community, in the Ararat region, for about 60 greenhouse farmers and owners, on the introduction of improved technologies and new tomato varieties Cinto Makhitos 667.

Since 2010, CARD has collaborated with Rijk Zwaan, a Dutch Company that develops new high-quality varieties of vegetables. The company continues to introduce new vegetable varieties to local greenhouse owners, as well as transfers new technologies, provides technological support and advice to vegetable producers.



The specialists along with the farmers also visited neighboring trial plots where new varieties were sampled, as well as on-site consulting was provided to many greenhouse owners.

*There is no magic to growing a good crop. The key is good management, and good management is just making the right decisions at the right time.*

On June 19-20, under the auspices of the USDA-supported project, Varietal Test of Cucumber and

Supported by



1/21 Azatutyun Ave., Yerevan 0037, Armenia  
Tel. (374 60) 440-550  
E-mail: [card@card.am](mailto:card@card.am); Website: [www.card.am](http://www.card.am)

