

**Evaluation Report on Implementation of Plans Made During  
Training Program Conducted by HasNa Inc. and the University of  
Maryland in 2007 by Leader Farmers in Southeastern Turkey**

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# **Evaluation Report on Implementation of Plans Made During Training Program Conducted by HasNa Inc. and the University of Maryland in 2007 by Leader Farmers in Southeastern Turkey**

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## **1. The Study**

The purpose of this study was to evaluate the plans of the leader farmers who participated in the training program conducted by HasNa Inc. and the University of Maryland in the U.S. in September 2007.

## **2. Objectives of the Study**

The objectives of the study were to obtain answers from the participant farmers for the following questions and find out what changes they have implemented on their farms:

- 1) What plans that you made in the workshop were you able to implement and why? In what ways did this make you a better manager of your farm?
- 2) If you were not able to implement some of your plans, why weren't you able to?
- 3) In what ways could we have improved the training that you received in Maryland?

## **3. Criteria for Evaluation**

The evaluation study was conducted in farms located in the province of five major cities in Southeastern Turkey, which are Sanliurfa, Gaziantep, Adiyaman, Mardin and Batman.

At the end of the training program in 2007, each participant farmer was asked to develop a plan for the changes that they would make when they returned home. The background information was obtained mainly from these documentations, and from the participant feedback and post-training questionnaire reports prepared earlier by each farmer. For each farmer a number of performance indicators such as those below have been observed.

- Adoption of innovations
- Changes in production plans (production design, rotation area, farm animals, changes in machinery usage, etc.)
- Production increase
- Income growth (changes in the use of input)
- Contact with other local farmers

- Changes in life standards

#### **4. Evaluation Period**

The farm visits and interviews with eight leader farmers were conducted from October 6th to October 11th, 2008; twelve months after the farmers' participation in the training program.

#### **5. Agricultural Profile of the Region**

The provinces that the farms are located covers about two third of a comprehensive project region known as the Southeastern Anatolia Project (GAP). This project is an integrated regional development effort in many areas including agriculture that seeks to improve the income levels and living standards of people by mobilizing and utilizing resources existing in the region. The project region has a share of about 10 percent in both the total population and geographical area of Turkey. Yet, 20 percent of total irrigable land in Turkey is in this region. The region represents approximately 30 percent of Turkey's total hydraulic potential mainly with the rivers Euphrates and Tigris. Construction of irrigation schemes is in progress in most of these provinces and tens of thousands of hectares of land is brought under irrigation every year. Cotton is one of the major products in the region. It has a share of one third in Turkey's total cotton production. Cotton is followed by wheat, barley, 2nd crop corn, vegetables, lentil, and sesame. Pistachio nut is intensively grown in Sanliurfa, Gaziantep and Adiyaman provinces. The total pistachio production of that region consists of almost 90 percent of the total production of Turkey.

#### **6. Main Findings (Observable Changes)**

**Mustafa Aktar**

*Akcakale, Sanliurfa*

##### *Background Information*

He expected to observe modern agricultural practices in 2007 training program in the U.S. After the training, he had plans of establishing drip irrigation system back in his farm. He also planned setting up a hothouse for pepper saplings. Within the year 2007, he had already planted olive trees on 250 decares and built a drip irrigation system for them. He planned to plant 650-decare olive trees, 300-decare vegetables and 300-decare fig, pomegranate and pistachio trees, to build drip irrigation system in those orchards and to enclose all these orchards with a wire fence.

##### *Summary of Operation*

- 250 decares<sup>1</sup> of olive orchard (18 months old)
- 50 decares of hot peppers, 10 decares of tomatoes and 10 decares of onions
- 25 decares of cotton and 25 decares of corn and 125 decares of sesame
- Main crop wheat and second crop corn
- 22 decares of a new variety of haricot beans
- Member of Eastern Mediterranean Olive Growers' Association
- Licensed dealer of Netafim Drip Irrigation Systems Company

*Answers to Final Farmer Questionnaire*

1) I have been able to build a 100-decare drip irrigation system for the acres in hot pepper, cotton and corn this year. As I am a dealer of a Drip Irrigation Systems Company, it has been easy for me to prepare a project for my fields and thus implement some of my plans. Dripping system reduced my input costs for watering almost to a quarter of those in previous years and brought many other rewards such as increasing crop yields when compared to surface irrigation. I plan to expand the dripping system to my entire olive orchard next year. I am thinking of changing the entire watering system in my farm in the long term. I look for opportunities to grow diverse crops for trial purposes. For the first time in my area, I planted a new variety of haricot beans last August on 22 decares irrigated with sprinkler system. I traveled to Cumra recently, where the most successful haricot bean farms are, to see and learn about growing that variety of haricot beans. They are growing well in my field as well and I expect to start their harvest in the second half of November. It has been a successful season in second crop this year, and I hope to extend it to larger areas in the coming years. I am planning to grow 5,000 pistachios in irrigated land next year, too. I planned to switch from extensive tillage to conservation tillage systems in my farm, and after the training I am doing my best to reduce the number of tillage operations where possible. I left my olive orchard without tillage this year. It saved me money, time and labor. I plan to buy special no-till machinery for vegetable production soon. I have been able to purchase a universal pneumatic sowing-machine a few months ago, which has special disks and is designed for sowing of many kinds of seeds precisely in all field types, including cotton, corn, tomatoes, beans, sesame seeds. Its high accuracy of dosage control allows achieving seed-saving. I also plan to buy a bar roller soon to squeeze the slot back together over and around the seed after dropping it. One of the major problems we face here is about getting the desired vegetable seeds and seedling. In order to solve this problem, I am planning to put up two of 200-decare greenhouses before next spring to grow vegetable seedlings. To achieve that goal, I have already acquired the basic metal construction parts.

As a dealer, I am in contact with many local farmers. I like sharing my experiences with them. Our local farmers normally won't try anything new unless they see it happen. Therefore, I invite them or give them a ride to my farm to show them modern irrigation systems. After seeing my operations and learning about the profits of drip irrigation systems, many of them had projections of switching to modern irrigation systems soon. One of my neighbors built a 3-decare drip irrigation system this year. Another neighbor farmer planted 3 decares of olive trees. Two other

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<sup>1</sup> 1 decare is a thousand square meters, and is about a quarter of an acre.

farmers in my village grow haricot beans each on a 10- decare land this year as well, and they all seem successful. After the training I am able to better control my anger and change my attitude. I am also interested in learning more about body language. I am now using my computer and the web more effectively to search and learn more about innovations and modern technologies that I can bring in to my farm. I am organizing regular meetings with my brothers once a week and we decide on what to do in the farm to improve our economic condition. Through using some economical analysis and budgeting, we plan to modernize our farm equipments and decrease the cost of farm inputs as much as possible.

2) I had plans of enclosing my orchards with a wire fence, but I do not find it necessary now because my neighbors have been careful about my operations so far, and they do not let their animals graze in my orchards. However, when the trees bear fruit in a few years I believe it will be necessary to take some safety measures.

As for vegetable growing, we have not been successful in growing onions this year due to both seasonal weather aberration and our failure in proper maintenance. Also, it was not a good season for tomatoes. I got the tomato seedlings from a company in Mersin, but because of its low price in market, it has not been a profitable year at all. I got pepper seeds from a company in Bursa. Unfortunately, almost half of it turned out to be of a different kind which is not desirable in local markets. I still have peppers in field but they had major damages because of a hail. Sesame is in good condition.

I have not been able to implement all of my plans as a consequence of economical restrictions. I prepared a drip irrigation project this year and applied for government subsidy, but it was not accepted due to subsidy budget limits assigned to our county. Therefore I have not been able to extend the drip irrigation system on to some more fields this year. However, depending on our financial conditions, I still have plans to expand modern irrigation systems to more of my crop land in the coming years. I am not planning to make a pomegranate orchard any longer because of uncertainty in its market. Pomegranate orchards increased surprisingly in recent years and we have no guarantee as to how to market them.

I had long term plans of establishing olive oil and pickled olive production systems, and facilities for drying red pepper flakes and fig, and for pepper sauce production. But they seem to need more time. I need to produce enough primary products before building processing units. We do not expect yield in olive earlier than the year 2010. I would really like to export olive oil to the U.S. and I expect the support of HasNa in achieving my goal.

3) I found the farmers training program extremely rewarding as it gave us the opportunity to observe a diverse set of farms and operations in far lands. In order to make the program more effective, I think its duration should be extended. Also, the participants could have been grouped in terms of their fields of activity, and so, farm visits could be designed for each group's needs. In Maryland, we usually had to visit livestock farms. I would personally like to see more of crop production and irrigation systems.

I am particularly interested in seeing the ecological pistachio production farms and if I am given another chance, I would like to visit that type of farms in California.

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**Ahmet Tokdemir**

*Asagi Alinca Koyu in Siverek, Sanliurfa*

### *Background Information*

After participating in the training program in the U.S., he had plans of growing fruits and vegetables instead of conventional crops like wheat, barley. He wanted to grow tomatoes and establish a pomegranate orchard with drip irrigation system and wanted them to serve as a model for his neighborhood to help others adopt changes in their production designs. He also wanted to employ handicapped people in his farm when additional labor was needed.

### *Summary of Operation*

- Cotton, wheat, barley, and tomatoes on 300 decares
- 3,500 young pomegranate trees
- Investment specialist at the Regional Directorate of Southeastern Anatolian Project (GAP)

### *Answers to Final Farmer Questionnaire*

1) Participating in the farm visits in the U.S. encouraged me to put my long standing ideas into work upon my return. First, I have established a pomegranate orchard with 3,500 saplings on closer spacing. However, I lost almost 40 percent of my young trees because of lack of experience in horticulture (especially in fruit production) and our failure in proper maintenance in the first months. I plan to replace dead trees with new saplings and build drip irrigation system in the entire orchard next year. In collaboration with a partner, I have also begun growing tomatoes on my farm using drip irrigation system this year. Unfortunately, due to weather aberration (severe North winds in growing season), we lost the entire crop. I am more willing to provide jobs for adults with mental and physical disabilities, when I need labor in my farm. My professional status makes it easy for me to stay in contact with local farmers and help them and share my knowledge with them when required.

2) I haven't been able to switch to zero-till method this year due to lack of necessary equipment. However, I have been more aware of ecologically and environmentally sound production practices since the training in the U.S., and I am trying to adapt the practices that are environmentally friendly when possible.

3) I believe that an extended period of training would be more beneficial to all participants. Besides, scheduling free days for the participants after their arrival and before their departure

dates in particular would make it easy for them to better adopt themselves to their new environment. It will also help all the participants quit looking for opportunities for shopping during the training period. In the future, it would be better to avoid scheduling a training program during Ramadan. I also believe that choosing younger participants as leader farmers will have a positive affect in terms of sustainability of the innovations brought into the region through training programs.

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**Mehmet Tahir Karakecili**

*Kes Koyu in Siverek, Sanliurfa*

*Background Information*

He expected to learn about different technologies and techniques in the U.S. in 2007 training program. After the training, he had plans of selling his animals to invest more on fruit gardens. He also had plans of switching to drip irrigation system in all his orchards and to sprinkler irrigation system for all his cropland. He planned to quit deep ploughing the fields or at least reduce the tillage operations in his farmland, and to grow second crops. He intended to work for himself on his farm instead of having people work for him, and to market his products direct to consumers without third parties.

*Summary of Operation*

- 40 decares of apple, 79 decares of pomegranate, and 31 decares of olive and 100 decares of pistachio (twenty years old)
- 200 decares of cotton, 500 decares of wheat, 300 decares of lentil, 400 decares of barley, feed crops and second crop corn

*Answers to Final Farmer Questionnaire*

1) Following the 2007 training program, I sold all my livestock, and so I had the funds to invest more on fruit production. I also had plans of giving up cotton which has not been profitable last year, and expand my fruit gardens over the same field.

I reduced the cotton cropland from 400 decares to 200 decares. So, I have been able to establish 40 decares of apple orchard, 79 decares of pomegranate orchard, and 31 decares of olive orchard in addition to my 100 decares of pistachio which is twenty years old. I have also been able to build drip irrigation systems in all those orchards. I have been able to get a 50 percent government subsidy for my apple orchard, and also got a five year term, interest-free credit for establishing the drip irrigation systems. All these implementations required more work and more financial support.

Although we have not been able to switch to zero-till method this year, we are trying to reduce subsoiling and excessive tillage in my fields. We do not cross the field several times with plough and turn the soil over any longer. We just prepare the seedbed on a strip a few centimeters deep through a cultivator and drop seeds into the slots. We have used that minimum tillage cultivation method in sowing wheat, lentil and barley this year. This tillage system cut fuel costs by about 70 percent compared to conventional tillage. It resulted in reduced labor in the farm management and also helped the environment. I have also had a pleasant season of growing second crop corn. I also grow lentil and barley in my dry fields.

2) We had a very dry summer this year. I have not been able to accomplish my plans about marketing direct to consumers without mediators. We need packing facilities firstly to be able to make any changes in marketing. It also needs time to develop alternative marketing strategies to gain a better price for our products. There are transportation problems because of geographical position of my farm. Its remoteness from the cities affects marketing negatively. Both the labor and transportation costs are higher in our village compared to places near the city. Because of my old age, I have not been able to work myself, thus I employed people to work for me in farm.

3) I would like to see the latest technologies in agriculture in the U.S. In order to enhance the effectiveness of training programs, I suggest arranging visits to farms where the latest technology is used which we are not able to see anywhere else.

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**Halil Karahan**

*Cagil Koyu in Kiziltepe, Mardin*

*Background Information*

He expected to learn about better ways of production and marketing, the technologies used in the U.S. (machinery, irrigation etc.), and process of forming a cooperative in the U.S. in 2007 training program. After the training, he had plans of working on reduced soil preparation, completing his drip irrigation project, and giving the fertilizer together with water. He also wanted to obtain greater output with less input from a given area and keep the soil in better health while farming.

*Summary of Operation*

- 1,200 decares are in cotton, 2,000 decares are in wheat and barley, 1,500 decares are in lentil, and 300 decares are in second crop corn
- 1,000 decares of my cropland spared for workers

*Answers to Final Farmer Questionnaire*

1) We are about to start harvesting cotton soon. We harvest cotton at faster rates with our advanced harvesting machinery. I have been trying to use machinery and equipment more efficiently and doing my best to use all the necessary techniques to minimize the harvest-loss rate. So far I have been successful. I have not been able to find no-till machinery to buy and try it, but I will still be able to practice conservative tillage method this year. After the harvest of cotton, I will leave the soil undisturbed, and then through a single operation on a 100 decare of that land, I will prepare the seedbed and plant wheat next season on pre-formed ridge remaining from the cotton without any other tillage. I expect that minimum tillage method will provide a number of benefits. It will save me time and will result in reduced fuel and labor costs more than 50 percent. I also believe it will reduce the loss of seed and bring an increase in yield.

2) I have a 250-decare sprinkler irrigation system but I have not been able to build a drip irrigation system yet. Although I have prepared a project for drip irrigation system and applied for government subsidy earlier this year, I have not been able to accomplish it because of failure in agreement with the associate supplier company.

3) The training program would provide more benefits if the farmers were to put into groups with reference to their farming activities, and the farm visits were designed according to interest of each group. We visited livestock operations, dairy farms and saw different types of dairy production systems in the U.S. However, I have not been able to apply any of those experiences back in my farm because I am not raising livestock. I am personally interested in seeing the use of advanced technologies in especially cotton and corn cultivation.

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**Vehbi Gonulacar**

***Kuyubasi Koyu, Batman***

*Background Information*

He wanted to know everything about farmers in the U.S. Upon his return, he had plans of modernizing his farm by learning new techniques and better ways of cultivating cotton and corn.

*Summary of Operation*

- 1,700 decare of wheat, barley and lentil
- 517 decare of main crop corn and 140 decare of second crop corn for silage
- 60-cow/heifer dairy herd grazed rotationally on pasture
- A few decare in mixed vegetables and fruits (pumpkins, cucumbers, red pepper, eggplant, lettuce, and radish, peanut, grapes), and alfalfa

*Answers to Final Farmer Questionnaire*

1) I have been impressed by seeing the importance of university and government sponsored research and extension in Maryland. They help the farmers improve the efficiency and profitability of agriculture, and save environment. So, upon my return, I decided to donate 2,100 hectares of my land to the government so that a University can be built on this land for the farmers of Batman. We hope to benefit from the researches and trainings that will be conducted at that university in the future.

I have increased the use of silage in animal feeding in my farm. I have a silage making machinery, which is a tractor-drawn forage harvester that collects and chops the plant material, and deposits it in a truck via a chute. Fodder prices increased recently, so I expect that using silage will cut the animal feed cost by 50 percent compared to fodder this year. Silage also helps us and my workers in terms of health by protecting us from the dust and dirt of fodder and much of hard work. I planted a small amount of pumpkins and cucumbers in my farm as I have seen it at research farms in the U.S. In order to meet family needs, I have also some vegetables (pepper, eggplant, lettuce, and radish), peanut, grapes, and alfalfa in our backyard. I am growing them organically [naturally] without using pesticides or chemical fertilizers. I am also trying my best to avoid using chemical medication for my livestock. In the training program, I have learned that if dairy animals are let to graze on natural environment, they produce better milk and meat. Since my return, I have been focusing more on raising animals on pasture rather than in confinement.

I am determined to quit subsoiling and heavy plow, and minimize tilling. I planted totally 1,700 decares of wheat, barley and lentil applying reduced tillage method of preparing seedbed on a strip by using equipments such as disc-chisels and harrow. I have seen that method in the U.S. However, due to the drought we suffered last summer in Batman, we had a crop failure, and we haven't been able to see the result. During the training I have also learned that high capacity machinery and equipment save fuel significantly beside labor and time. Having sold my low power tractor, I bought a high power (120 HP) tractor. I have also purchased a new combine harvester this year.

One of the significant issues that I have learned in the U.S. is not to give harm on natural resources while farming. I have abandoned the practice of burning crop residue (leftover) in the field since then, and many of my neighbors quit burning stubble, too. I am trying my best to limit the use of chemical fertilizers on my farm and focusing more on using manure from the livestock depending on availability. I treasure giving to charities. I have no child but I sponsor many students.

2) It has been impressive for me to see large scale dairy farms having 2,000 cows and using robotic milking systems in the U.S. They also had systems to separate solids out of the manure. When I returned home, I made an investigation and realized that they require too much cost for me and they were not applicable for us.

One of the major problems we are facing here is that there is a shortage of underground water source. Therefore, I had to carry water from a 3.6 kilometer distance. If I can get government subsidy, I will be able to increase the sprinkler irrigation system in my crop lands.

3) I would like to see more operations utilizing new and innovative systems. It would be better for us if the training program is not scheduled during Ramadan.

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**Sirri Ozturk**

***Kahta, Adiyaman***

*Background Information*

He expected to learn about animal feed production, dairy management and marketing methods, high quality milk production, and innovative technologies in the U.S. He had plans of managing use of fertilizers by crops, developing correct choice and sequence of rotation crops, cropping his land two times or more in a year, achieving high profitability on small land resources, quitting runoff farming with traditional torrent (spate) irrigation methods to shift to sprinkler or drip irrigation systems, filtering the solids out of the manure before spreading it on the crops, and most of all, protecting the environment while farming. For his dairy farm he had plans of shifting from traditional covered housing (cowshed) to open (free stall) system, replacing hay with corn silage in feeding dairy animals, building milk cooling unit, using artificial lighting to increase milk production, regularly trimming the hooves of dairy cattle, speeding up animal breeding activities by artificial insemination, developing efficient marketing channels for retail, generating greater profits by finding value added opportunities for dairy products, moving toward branding, reducing labor need to the minimum, growing produce for consumer demand, and cooperating with research institutions.

*Summary of Operation*

- 50-cow (mostly Holstein) dairy free-stall operation
- 15 decares of organically grown mixed vegetables (pepper grass, parsley, arugula), grains and crops
- Small number of pomegranate and fig trees
- Professional veterinarian and the President of local Dairy Cattle Breeders Association in Adiyaman

*Answers to Final Farmer Questionnaire*

1) Silage was not known very well in this area although it is an important feed to breed dairy animals. Silage making is difficult for many farmers; also they often have difficulty in accepting new practices. In order to solve these kinds of problems, I had plans of buying silage packing machinery and delivering silage to local farmers in small amounts in accordance with their needs. This way I would also be able to join an innovative product to the market. In collaboration with the Dairy Cattle Breeders Association (DCBA) in Mersin and with the support of 50 percent government subsidy, I have been able to buy silage packing machinery for our association this

year. For the first time in my area, we began using silage bagging system. With this machinery, silage is emptied into a bagger, which puts the silage into plastic storage bags. Packing system helped local farmers greatly adopt silage. We have also been able to use it alternately with DCBA in Mersin because of having different corn harvest seasons. I am in contact with all local dairy farmers in Kahta and there is a good market for silage in bags. I publicize it with fliers and emails. In social terms, this application also provided employment opportunity to fifteen young people in our community.

I have been raising about 50 Holstein and a few Simmental dairy cattle. I used to house cattle in a covered barn. Following the training, I have been able to add an open lot to the closed barn. Many local dairy farmers visit my operation and they get convinced that they too can build open free stall system for their cattle. I have been able to shift to sprinkler irrigation systems on my farm. It provided me more than 60 percent saving only at the cost of electricity. By shifting to modern technologies such as drip irrigation and also by keeping up automatic milking, I have also been able to implement one of my plans to reduce labor need on the farm. In addition to forage crops, I also grow vegetables. I have been able to try crop rotation system this year to crop my land three times a year. I have first grown lettuce after January which was followed by pepper grass, parsley and arugula. I am now growing onion which is a plant of shorter growing season. This way by planting a new crop immediately after the harvest of the other three times a year, I have been able to achieve my goal of multi-cropping on my land.

Our visit to the U.S. motivated me highly toward actualizing my plans. I have been more encouraged to apply innovations. During our farm visits in the U.S., I have realized how little we have been working in our country. After my return I have been able to work more, and I enjoy working. I employ sixteen young people and I consider it as a social responsibility to give a helping hand to those people. I have seen in the U.S. how well-developed people could go beyond judgments and competition and work together. I am thinking about how we could follow such a sample. We have abandoned our old ways of operation, and began reviewing and controlling our expenses and incomes by using simple input-output analysis. I have learned that farms are usually operated by families and passed down from generation to generation in the U.S. My son studies at college and I have given him some responsibilities about managing our farm. He does the farm's bookkeeping and is trying to use economic analysis and budgeting by keeping account of cost of inputs and incomes which show us how our operation is affected by changes. I have been more careful about protecting the environment since the training. To this end, I have placed two bee hives at a corner of my cropland to observe the environmental impact of my farming practices by means of controlling the behaviors of bees.

2) I haven't been able to implement all of my plans this year. My current farm area remains within the updated city development plan. Therefore, I am planning to sell my farm and purchase a larger one. I am not able to work on my farm every day due to my other responsibilities. Lack of enough finance is a limiting factor for the adoption of high levels of technologies such as using sex-sorted sperm in artificial insemination and in vitro embryo production. I have not been able to buy milk cooling unit for my dairy. Also manure separator. Due to the small size of my farm, soil analysis would not be profitable; therefore I have not had a soil analysis. I have been using

artificial lighting for some time now but I have not been able to measure its affect on milk production yet.

3) The training program could have been more effective if the farmers were to put into groups and the training schedule were designed according to their expectations and levels of education. However, seeing diverse farm operations broadened our horizons.

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## **Fikret Kurt**

*Ermis Koyu in Oguzeli, Gaziantep*

### *Background Information*

He wanted to see new techniques in green housing, pest management and modern irrigation systems in the U.S. Following the program, he had plans of modernizing his farm by applying new techniques and developing better ways of cultivating cotton and corn.

### *Summary of Operation*

- Of the 180 decares, 60 decares in ten years old olive, 60 decares in 25 years old pistachio, and 30 decares in 5 year old wine yard
- Wheat, barley and lentil, and also second crop corn on a total of 500 decares
- 30 decares of water melon, 20 decares of peppers, 30 decares of tomatoes, 25 decares of second crop melon
- 180 head beef cattle operation (currently 10 head available)
- President of Local Irrigation Union

### *Answers to Final Farmer Questionnaire*

1) We have benefited a lot from recent investments by GAP that brought most of our non-irrigated farm land under irrigation. I have been able to plant 30 decares of water melon in an irrigated area with my new sowing machine for the first time. I have got a good profit because of early harvest. I also planted pumpkins and got a high yield. Following the harvest of pumpkins, I planted second crop corn on the same land. I gave up cotton this year because it is not profitable any longer. I had a failure in tomatoes this year because of the poor quality of seedlings, and pests. None of the farmers have been successful in growing tomatoes this year in our region. I have also planted second crop melon, and we are about to start its harvest and it seems to be highly profitable. We had plenty of water from the dam to irrigate these groves this year. I am planning to build a 60-decare drip irrigation system for our pistachio grove next year. To implement my irrigation plans, I have already purchased the necessary materials to establish 200 decares of sprinkler system on decares where I grew wheat. I have also started a beef cattle operation by completing the construction of a barn with a capacity for 180 beef cattle. Currently

we have 10 calves and we are buying more animals and other necessary equipments. There is no marketing problem for livestock in our area and I have a direct market opportunity to a slaughterhouse in Nizip, a nearby town.

I have been able to sell my old low power tractor and buy two of 2WD John Deere tractors a few months ago, one 65 HP and the other 95 HP. I also bought four other farming equipments including surface tillage machinery from Izmir this year. This reduced tillage machinery crumbles the crop residues on the field such as stalk and stable. After that, you only need to direct sowing. Using that machinery, we abandoned burning crop residue in field. It reduced fuel and labor costs by 50 percent and I believe that it also increased the corn yield. I am trying to determine the financial and agricultural viability of new crops and varieties to grow in my lands, and save more money for farming equipments. I have also bought a private car. One of my sons, who had moved to another town to work, remigrated to the farm recently. After receiving the training on problem solving and conflict management processes, I feel more in harmony with others in my relations and I try to build mutual respect. I also share with my neighbors what I have learned in my visit to the U.S.

2) I haven't been able to get soil analysis because there is not an accredited soil analytical laboratory in our vicinity. Therefore, we had to keep applying fertilizer types and amounts without knowledge of soil characteristics and crop requests. We had to keep using pesticides as the dealer would suggest it. I haven't been able to cultivate 200 decares of my field because of high level of ground water.

After our visit to the U.S., I am focusing more on farming, and I am working with joy. I am eager to buy new farming machinery. I have been able to make new investments on farming machinery as more of our farmland was brought under irrigation this year. I have benefited a lot from our training program in terms of communicating and having better relationships with others. I am more concerned about environmental issues. I feel more capable of controlling my behaviors.

3) It has been a great opportunity for us to join the training program and visit farms in the U.S. Everything was good except the training period overlapped Ramadan.

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**Ahmet Polat**

***Canakci Koyu, Sanliurfa***

*Background Information*

He wanted to learn more about farm management, storage, packaging and marketing of products, and also see new techniques in pest management and modern irrigation systems in the U.S. Following the program, he had plans of applying zero-tillage practices in his cropland and

developing better ways of environmental farming. In terms of social responsibilities, he wanted to help promote awareness on social solidarity and serve to prevent environmental pollution.

### *Summary of Operation*

- 250 decares of cotton, 500 decares of wheat, 350 decares of second crop corn, also barley and lentil.
- 500 olive trees
- Member of Environment Protection Agency, and of Producer and Marketing Cooperative, and of Agrogap Leader Farmers Association, and of GAP Ecological Farming Development and Social Solidarity Association.

### *Answers to Final Farmer Questionnaire*

1) After our visit to the U.S., I am focusing more on cooperation, social solidarity and environmental issues. Although I haven't been able to buy perfect zero tillage machinery, I have been able to purchase a new type of sowing machine with reduced tillage requirement. I have been using it since I bought it and so far it saved me time, labor and fuel costs by more than 25 percent. I have been able to sell my old tractor and buy a new one, as well. I have also planted wheat using high quality certified seeds this year and it has been more productive than previous years. Participating in the training program in the U.S. enabled me to apply my plans with more courage. It also promoted my awareness on social and environmental issues. I am doing my best to avoid use of pesticides in my olive orchard and trying to grow olives organically.

I have been able to apply conflict resolution principles in my family and my farm workers trying to build mutual respect and understanding. My labor consists of two permanent families and a few seasonal workers. I am also trying my best to encourage local farmers to become members of our Environment Protection Agency in order that they may take more responsibility on these issues. I have better social relations with people since my visit to the U.S. People in the U.S. seemed to act more independently and kindly toward each other. I have found out that, compared to Americans, people in Turkey act less independent but also less kindly. I have some achievements on marketing with cooperatives, through which we have been able to market in common the individual producers' production and gain a better price for our products.

2) I had plans of building drip irrigation system on my cropland by using government subsidy; but I have not been able to build it because of the delay in the implementation of the government project to install underground drainage system in our region. It is not completed yet and I need to wait till it is completed.

I am more aware of the importance of cooperation, social solidarity and of non-governmental organizations. I am focused on promoting awareness about the benefits of cooperation and farm insurances, particularly against aridity and natural catastrophes. I had discussions with insurance companies to this end. But, because of weakness of solidarity and cooperation I haven't received sufficient support from farmers to meet the number of insurance holders required to start an insurance agency. Therefore, I had to suspend my plans about opening an insurance office.

Within the context of social responsibility, I had plans of signing an agreement with the local Environment Protection Agency to give out 500 waste bins and ashtrays to markets and workplaces to be placed near their street entrances to serve to reduce environmental pollution by. I haven't been able to achieve this goal because of the delay about agreement by the agency.

3) I have found it most useful to learn about communication skills and conflict resolution principles in our training program in the U.S. I believe that the programs designed to promote awareness about issues such as the improvement of solidarity, social empowerment by developing communication and conflict management skills can be far more useful in future trainings.

## **7. Overall Evaluation**

According to final questionnaire evaluation results, in general terms, the training program has been successful and effective. Farmers actively participated in conversations, and were very much involved during the interview sessions.

They have benefited from farm visits and the discussions greatly as they have had the opportunity to have first hand information on farmers' practices and been able to observe alternative farming techniques in different farm operations. Their training experience encouraged them to make changes in their farms and implement their plans to improve their production. Their tendency toward quitting habitual farming practices and progressing into professional farming operations has been promoted. Application of innovations is regarded as a very important factor and believed to create the difference in quality, and success.

A number of performance indicators have been observed in operations during the study. Knowledge transferred during the training, and farmers obtained from farm visits and discussions they had, has been, and will be, contributing to their operations and management skills by bringing changes in the adoption of innovations, production plans, crop designs, farm animals, use of input, production increase, income growth, farm resource management, contact with other local farmers, problem solving, and life standards. There are by and large observable differences and measurable outcomes frequently in such areas as machinery and equipment usage (tractors, sowing, harvesting and packing machines), water management (shifting to sprinkle and dripping irrigation systems), growing diverse crops, multi-cropping and building new orchards (fruits and vegetables instead of conventional cereals and cotton), implementing environmental stewardship and sustainability (abandoning excessive tillage operations and the practice of burning crop residue, limiting the use of pesticides and chemical fertilizers, and volunteer service to prevent environmental pollution). A few farmers have also reported improvements in developing marketing strategies (marketing through cooperative, joining a new product to the market), use of modern technologies (computer and web), and others that are explained for each individual farmer's case in the previous section. Their experience has also had a positive impact on their interest in social activities. The farmers are willing to share their experiences with local farmers in their regions.

They have been fairly successful in realizing their plans when, first, these plans were part of their long term goals, second, their current activities facilitated achievement of these goals, and third, their physical conditions and economic factors allowed them to implement those plans. Some farmers have benefited a lot from recent GAP investments with regard to distribution of water which increased agricultural productivity in the region and helped them greatly to implement new investments and methods. Farmers have also profited a lot from agricultural subsidies by the government, which played an effective role in putting their plans into operation. In some cases, on the other hand, credit constraint and lack of external finance have been a very important limiting factor for the implementation of their plans and adoption of new technologies. Difficulty of marketing without mediators seems to be an issue for some farmers.

A number of plans require additional time and resources to be implemented, and some specific systems and technologies that they have observed in the U.S. have not been applicable to their situations. However, all of the participant farmers are willing and prepared to progress in accomplishing their plans in the near future and over time.

## **8. Major Suggestions**

Following up education in the region and agricultural extension support to farmers by giving ongoing advices on implementations could help the farmers greatly, particularly in successful management of innovative processes and changes. Educational support related to new practices could be accomplished best by effective extension programs and agricultural advisory services through which farmers and extension workers should regularly meet, share knowledge and discuss about problems and solutions.

To increase the effectiveness of future trainings, programs with more targeted farm visits and workshops could be developed by reviewing the current activities, future prospects and specific needs of selected farmers along with physical, economic, and social factors associated with their areas.