

A publication from the DESIRE project - funded by the European Union's 6th Framework Program 'Global Change and Ecosystems'

Turkish farmers learn about DESIRE technologies to combat desertification

Knowledge exchange visit sparks enthusiastic responses!

Turkish farmers from the Eskişehir study site travel to the Karapınar study site to compare results of field trials



Google Earth location of DESIRE study sites in Turkey

Two workshops were held by researchers with farmers to select sustainable strategies to reduce wind erosion and conserve groundwater. Farmers chose to try planting *Caragana korchinskii* with woven-branch fences, on earth terraces, to reduce the erosive effects of strong winds. State subsidies are already supporting drip irrigation to conserve groundwater, so the farmers chose to test out no-tillage techniques, mulching, and leaving land fallow. Reduction of tillage keeps a vegetation cover over the soil and reduces the exposure to erosion by the wind.

Sixteen farmers and their families from different villages around the Eskişehir study site, were invited to visit the Karapınar study site and some surrounding historical and geographical places. In the 1960s Karapınar was famous for cereals, but wind erosion resulted in a sandy wasteland. Since then agriculture irrigated with groundwater has expanded, but groundwater levels are now very low. The visit took place between 3-6 July, 2011. It was the final event for DESIRE in the series of workshops and meetings between researchers and stakeholders held in Turkey.



The visitors see how the strong winds blow sand over the bedrock

The visit to Karapınar

The farmers and their families were collected from their homes in Eskişehir in the early hours of Sunday morning July 3, 2011, to be driven to Karapınar. At 14:00 pm they reached Konya, a town near Karapınar, after a comfortable journey. There, they were met with an agriculture engineer Selman Koyuncu, a friend of Dr. Mehmet Zengin from the DESIRE project staff. Everyone visited the complex and museum of Mevlana, Aladdin and Tavusbaba mosques, and the Akyokuş and Aydınçavuş hills. The guests passed the night in the guesthouse of Selcuk University.



Dr Mehmet Zengin explains the aims of the DESIRE experimental trials

On Tuesday morning, July 5 the farmer group moved to the nearby Ürgüp and Göreme tourist areas. There they visited the Ihlara valley and some local museums and historical sites. After a long journey, the group returned to Eskişehir on Wednesday morning July 6, at 05:00am!



Female farmers, old and young, are interested to hear more about solutions to combating land degradation

The next morning at 8:30 am, the visitors were taken to the Karapınar site, which, like the area around Eskişehir, is a desertification hotspot. Dr. Faruk Ocakoglu, Dr. Mehmet Zengin, a local farmer, Mehmet Gumusoy and local TEMA representative Musa Ceyhan met the group there. TEMA is a local NGO. The whole group toured the area, which is renowned for wind erosion, and gathered information about the history of this remarkable open-air museum. Then they travelled on to Apak Yayla where the DESIRE trial field has taken place. Here technologies against wind erosion and water stress were explained and discussed. After lunch, a very famous sinkhole plateau to the north of Karapınar and two volcanic lakes were visited. The night of July 4 was passed in Karapınar.



The farmers explore the sand dunes which have been revegetated with fruit trees

What the farmers said.....

Here are the impressions of some of the farmers participating in the visit:

Burhan Göneş (38) was impressed that areas that had once been made into sandy desert, with unsustainable use of groundwater, had been brought back into sustainable cultivation and production. He was also amazed by the natural sink holes linking down to the groundwater in the limestone rock.

"It seems that the measures were too late to taken in the past. It is quite difficult to imagine these places as desert in the 1960s. There has been excessive use of groundwater. In addition, the sinkholes we visited were also very different and strange. They are so steep-sided and deep. Unbelievable."

Bahattin Yenipınar (37) realised that the effects of wind erosion and the decreased availability of groundwater must be taken seriously, by using protective measures.

"Relics of cane curtains used to stop wind erosion are incredibly effective. A massive effort must be made to halt the mistakes of the 1960s. Wind erosion in this region is like a sleeping monster that may wake up if unsustainable agricultural practices are used. I am surprised with the very rapid decrease of groundwater level, up to 30 m in 20 years. It shows clearly how excessive groundwater pumping has been."



Burhan Göneş inspects the quality of wheat seedlings



Bahattin Yenipınar tastes sour cherries, close to the DESIRE experimental site



In the museum, looking at photographs of the area in the 1960s



The farmers examine the DESIRE experimental trial fields

Emine Yenipinar (13)

"Sinkhole formation and appearance is very impressive. Fairy chimneys on soft rocks were also very interesting. I have told all my friends all about my experiences since my return home"

Halil Basturk (55)

"It is surprising to see the once barren land so green now, irrigated with groundwater. This shows the success of man-made technologies, but also exploitation of the natural environment."



An impressive sinkhole, with "fairy chimneys" carved by water in the soft rock



The farmers examine the beginnings of a new sinkhole

Key messages

Farmers from areas subject to land degradation are beginning to understand that they have an important part to play in keeping agriculture sustainable and preserving their livelihoods for future generations. In Karapinar the farmers from Eskişehir have seen that wheat can be grown successfully with no-tillage, and fruit trees flourish in mulched orchards. For crops that need irrigation in Karapinar, depletion of groundwater is being better controlled through combinations of drip and sprinkler irrigation. Measures to control the movement of loose sediments low in organic matter include planting *Caragana korchinskii* on earth terraces with fences of woven branches. Gradually the sediments fill in the depressions between the fenced terraces to make a flat surface.

Back in Eskişehir the farmers have learned that their own wheat fields should always be ploughed perpendicular to a slope, not parallel to the slope, to minimise soil erosion and the formation of gullies.

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The DESIRE project (2007-2012) is funded by the European Commission, VI Framework Program, 'Global Change and Ecosystems' and the governments of France, the Netherlands, Italy and Spain. It brings together the expertise of 26 international research institutes and non-governmental organisations (NGOs). This project is coordinated by ALTERRA – Research Institute for the Green Living Environment, the Netherlands.

Editing/layout : Nichola Geeson, MEDES, July 2011
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