It’s never too late to learn

Reaping the harvests of high-tech farming in Azerbaijan
“I’m sixty years old now and my family have been growing wheat here for decades”
says local farmer Kazim Mammadov.
‘There are always good and bad seasons in farming but we’ve really been struggling in recent years. There’s been a definite reduction in the quantity and quality of our wheat.’

Over half of the population of the Shaki district (rayon) of northwestern Azerbaijan work in agriculture, producing some 14% of the country’s entire wheat harvest.

Like most smallholding farmers in the Shaki rayon, Kazim and his six children practice traditional methods, basing their planting and harvesting decisions on previous experience and guesswork and using surface irrigation. These traditional farming methods produce lower crop yields, degrade the soil, reduce biodiversity, and impose an unsustainable strain on the region’s scarce water resources. These combined factors further make the farmers of the Shaki district especially vulnerable to the effects of climate change.
Bringing about fundamental changes in traditional practices is a complex challenge in any context and one that requires sensitivity to local needs and concerns, with realistic measures to support transition and clear incentives to encourage the adoption of more sustainable practices.

This is the approach taken by a new UNDP Agro-Biodiversity Programme funded by the Global Environment Facility and the Government of Azerbaijan with the aim of helping small-scale farmers to improve their livelihoods by adapting their techniques.

The programme is using innovative technology, training courses and small grants to raise farmers’ awareness of more efficient ways to plant, irrigate, fertilise, harvest, store and sell their crops, significantly increasing their productivity and market access.
The training was an eye-opener. We have so much experience but we didn’t know the agricultural science – the structure of the soil, the effects of pesticides and fertilisers, or ways to irrigate the land without wasting so much water.

Kazim has now changed his irrigation methods to a drop-by-drop system that uses much less water and has greatly reduced his water bills. Based on his improved knowledge of best practices in the timing and application of fertilisers and pesticides, he is now using far less chemicals, not only making significant savings but helping to preserve the environment.

In line with the aims and design of the programme, these improvements in the productivity of the Mammadov household’s farm have been observed and emulated by neighbouring farming families.
Kazim has joined with four other families in a cooperative to share resources – including a scheme for sharing tractors – and lessons learnt about different types of seeds and techniques of irrigation, soil improvement and pest-control. The results can be seen in healthier crops, reduced costs and improved yields throughout the neighbourhood.

The training provided by the programme is not limited to farming techniques but also covers basic business skills to help farmers make the most of their resources. In addition, the programme awards small grants to farmers to support the purchase of equipment to increase their incomes.

The Mammadov household used their newly acquired business skills and knowledge to decide on the best investment to make in their farm with the programme grant.
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'It's never too late to learn': Reaping the harvests of high-tech farming in Azerbaijan

‘Apart from all the changes we’ve made to the way we farm, we also had the chance to apply for a grant,’ says Kazim. ‘We talked about the most cost-effective ways to improve our income and we decided the best business move was to invest in better storage. The reason was that our old storage facilities were in bad condition, but more importantly we worked out that having better storage means we can preserve our wheat to sell at a better prices when demand is high and supply is lower.’

The scope of the programme goes far beyond assistance at individual level. Working with Azerbaijan’s government, UNDP has designed the programme to consist of three complementary components.

The first component seeks to improve knowledge and conservation of agro-biodiversity, encouraging the wide-scale reintroduction of native and more environmentally friendly crops in the three rayons of Sheki, Goranboy and Goychay.

In consultation with local farmers, the Ministry of Agriculture and the National Genetic Institute, the programme has focused on reviving and preserving a range of native species of wheat, vegetables and forage crops. Support for this objective has included the purchase of state-of-the-art equipment for the Genetic Institute to acquire and freeze seed banks, as well as training courses for farmers on how to reintroduce these species.
The second component seeks to improve collaboration and cooperation between agricultural institutions and small farmers to improve agricultural productivity and reduce land degradation using native crops. For example, the programme will establish innovative agro-advisory and training centres for farmers in all three rayons. As of next month, a new mobile training and soil-testing laboratory will be helping to spread information about the most successful farming methods to adopt in local conditions.

To help farmers make more informed decisions about which crops to plant at what times and when not to use water, the programme has further procured a number of small weather stations and will soon launch an SMS notification system.

The third component of the programme seeks to strengthen incentives that encourage the planting of native crops and improve local farmers’ access to commercial markets for their products. The new agro-advisory centres will play a lead role, for example, in helping to link farmers to new markets.

In addition to these environmental and productivity benefits for local farmers, the programme also supports a key government priority of reducing dependency on food imports by increasing domestic food production and diversifying crops.
‘We believe the Mobile Lab has the potential to transform the fortunes of smallholders in this region,’ says Shamil Rzayev, Programme Analyst at UNDP. ‘The lab is equipped with cutting edge PH-meters and microscopes to help farmers analyse the nutrient status of the soils on their farms and determine the right type and amount of fertiliser to apply. This is crucial for achieving optimum crop productivity.’
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