

Tunisia 'sandy' farms resist drought, development

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Tunisian farmers in the small fishing town of Ghar El Melh are fighting to preserve a unique way of growing crops on sandy plots using a traditional, delicate irrigation system

Farmers near a seaside lagoon in northern Tunisia are fighting to preserve a unique, traditional irrigation system that has sparked renewed

interest as North Africa's water shortages intensify.

Retired schoolteacher Ali Garci wanders among tiny sandy plots, inspecting his potatoes, lettuces and onions.

"It's not land that we cultivate for the profit it brings, but for the art and the pleasure," says the 61-year-old, who works around a hectare (2.5 acres) inherited from his family.

Local farmers have used the "ramli" technique since the 17th century, when Muslims and Jews settled in North Africa after fleeing the Catholic reconquest of Andalusia.

Some found safety in Ghar El Melh, a small fishing town in Tunisia's north.

But they had to battle a lack of cultivated land and water.

They learned to take advantage of the light, sandy soil, and the fact that underground freshwater, which is lighter than seawater, "floats" above the saltier groundwater below.

When rainwater from the hills reaches the sandy area around Ghar El Melh's lagoons, instead of mixing immediately with the brine below, it forms a thin layer of fresh groundwater.

Twice a day, the tides of the nearby Mediterranean raise the level of both, bringing precious freshwater in contact with the vegetables in the ramli plots.

"It's as if the sea is suckling its young," said Abdelkarim Gabarou, who has worked the traditional plots for more than 40 years.



Tunisian farmers have learned to take advantage of the light, sandy soil and the fact that underground freshwater floats above the saltier, heavier groundwater below providing crucial water for crops

'Every drop of water'

The ramli farms—ramli is Arabic for "sandy"—cover around 200 hectares (500 acres) and support around 300 people.

They were listed last year in the UN Food and Agriculture Organization's (FAO) list of Globally Important Agricultural Heritage Systems.

The FAO said the ramli system was "unique not only in Tunisia but in

the whole world".

Ramli produce is said to have a particular taste, and is in high demand both locally and in Tunis.

But farmers voice regret that their products lack formal certification, despite the FAO designation.

They must also contend with growing threats to their unique farming system, both from [climate change](#) and development.

As rainfall becomes less regular and sea levels rise, the ramli farmers' delicate dance with nature is becoming harder.

"We're totally dependent on rainwater," Garci said. "We try to preserve it in the most natural way possible."



Known as 'ramli' farms, this delicate balance with nature is under threat as rainfall becomes less regular due to climate change

For the system to work, the roots of the vegetables must reach freshwater but also, crucially, not the saltwater below.

That requires precisely the right amount of sand above: a layer exactly 40 centimetres (15-and-a-half inches) thick.

Raoudha Gafrej, an expert on [water resources](#) and climate change, says it would be near-impossible to reproduce the ramli system elsewhere.

"This ingenious system doesn't cover a huge area... but we have to preserve it, because the country needs every drop of water it can get,"

she said.

Valuable real estate

Unlike in other parts of Tunisia, these farms thrive all year round without artificial irrigation, allowing the farmers to produce up to 20 tonnes (22 tons) of crops per year.

Reeds protect the plots, just four metres wide, from wind and erosion, but shielding them from human activity is another matter.

This beautiful coastline, where a long strip of white sand separates the lagoon from the sea, is popular with holidaymakers.



Retired Tunisian school teacher Ali Garci farms a plot of land inherited from his family and says this traditional form of agriculture recognised by the UN as a globally important heritage is 'totally dependant on rainwater'

"Lots of farmers are thinking of selling their land for good prices, to people who want to build houses overlooking the sea and the hills," said Garci.

Meanwhile, he says, very few young Tunisians want to become farmers.

But in a country where 80 percent of water goes to irrigation, any effort to make more efficient use of water is valuable.

On the Tunisian island of Djerba, where summer water outages are common, an NGO recently renovated 15 ancient reservoirs to collect rainwater for irrigation in the drier months.

Gafrej said such efforts were vital.

"We need to help this culture of [water](#) preservation to take root," she said.

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