



Could Salicornia Work as a Biofuel?

A non-profit organisation in the UAE is investigating the production of a salt-tolerant crop to diversify its energy portfolio. Set up in 1999, the ICBA is committed to sourcing highly resistant plants which can tolerate extreme climates and thrive when fed with saline water. Salicornia, a genus of edible succulent from the southern United States, fits that bill.

Having already been established as a viable source of sustenance to ease the country's food security woes, Salicornia is now being developed for use as a biofuel. Given that the UAE is heavily reliant on its huge reserves of oil and gas for its economic stability, and that both these fossil fuels are fast falling out of favour with governments around the world, Salicornia could prove to be a viable solution to both problems.

Solving food security

According to [expert predictions](#), global food demand is expected to increase by as much as 98% by 2050. Given that the UN reports that 41 million people are already struggling with famine on a daily basis, that means that new and innovative solutions will be required to compensate for the shortfall.

The good news is that at present, a mere 11% of the Earth's land is reserved for agriculture and the production of food. Some regions, like the Middle East, have such inhospitable climates that cultivating crops is an arduous task. With sweltering temperatures, little rainfall and poor soil quality, growing anything in the ground is difficult – but not unachievable.

The ICBA has investigated over 1,200 varieties of quinoa and struck upon five which can flourish in the UAE's arid conditions. Similarly, it has found that Salicornia is one of the most salt-tolerant plants on the planet, meaning that the UAE's historic lack of precipitation is not such a formidable barrier against its cultivation.

Diversifying its energy profile

Last year, the UAE produced an estimated 3.7 million bpd of oil and 55.4 billion cubic metres of gas. The majority of those amounts were exported to other countries, earning the UAE its economic prowess. However, concerns over climate change and global warming are making fossil fuels a less attractive proposition all over the world, meaning the UAE must look to diversify its energy and economic profiles.



Biofuel could offer one way to do that. Since their advent in 1984, [biofuels have changed significantly over time](#), with literally thousands of potential fuel sources at the research and development stage at present. Salicornia could represent a promising candidate to lead the UAE’s sustainability drive, given the unique characteristics that make it a perfect fit for the Middle East.

The ICBA regards Salicornia as a “desert superhero” and already has the capacity to produce 500kg of the commodity. At present, this is mainly used for seeding purposes, while the organisation is also collaborating with several food manufacturing companies to make Salicornia-based produce. At the same time, it is being developed as a biofuel. If successful, it could have an outsized impact not just on the UAE and the surrounding nations, but on countries with arid climates all over the world.