

# Sahara oasis from space

September 20 2013

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Deep in the Sahara Desert, the Al Jawf oasis in southeastern Libya is pictured in this image from Japan's ALOS satellite. The city can be seen in the upper left corner, while large, irrigated agricultural plots appear like Braille across the image. Between the city and the plots we can see the two parallel runways of the Kufra Airport. The agricultural plots reach up to a kilometre in diameter. Their circular shapes were created by a central-pivot irrigation system, where a long water pipe rotates around a well at the centre of each plot. Since the area receives virtually no rainfall, fossil water is pumped from deep underground for irrigation. Credit: JAXA, ESA

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With the Sahara Desert making up most of Libya, only 6% of its territory is suitable for agriculture. Although Libya has no permanent rivers or natural inland water bodies, it has various vast fossil aquifers – natural underground basins that hold enormous amounts of fresh water.

These aquifers are a legacy from around 10 000 years ago, when this territory was home to rivers and lakes that were regularly replenished with rains. Heavy amounts of rainfall seeped underground to saturate subsurface sandstone, penetrating as deep as 4 km.

In 1983 the Libyan government began the Great Man-Made River Project to pipe water from the aquifers to the populated coastal plains for drinking water and irrigation.

Thousands of kilometres of pipeline have been constructed, with more than six million cubic metres of [water](#) flowing daily from the heart of the desert to meet coastal requirements.

Japan's Advanced Land Observing Satellite (ALOS) captured this image on 24 January 2011 with its Advanced Visible and Near Infrared Radiometer type-2, which charts land cover and vegetation in the visible

and near-infrared spectral bands at a resolution of 10 m.

ESA supports ALOS as a Third Party Mission, which means ESA uses its multimission ground systems to acquire, process, distribute and archive data from the satellite to its user community.

This image is featured on the [Earth from Space video programme](#).

Provided by European Space Agency

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