

## Fertile Crescent is fading

If oil is supposed to have been the cause of some recent wars, water could be the next. And one of the politically hottest area in the world, the Middle East, is going to become even hotter because of global warming. The so-called Fertile Crescent, in fact, is going to fade, changing his shape and probably disappearing. Using a new climate model developed at Meteorological Research Institute in Tsukuba (Japan), Alpert Pinhas, a professor of atmospheric sciences at Tel Aviv University (Israel) and Research Line 5 Water Cycle co-leader, foresees that the Fertile Crescent will lose its current shape and might disappear by the end of this century.

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About 10,000 years ago the Neolithic revolution began in this region, when Stone Age nomads settled down founding the first villages and towns. Here, the Sumerians started scratching wedge-shaped symbols into clay tablets creating the world's first script. Peculiar climate of this area, embedded in desert and barren muntains, allowed a rain-fed agriculture. Winter rainfall and snow in high mountains in the north were the main sources of water. In winter, humid air coming from the Atlantic Ocean through the Mediterranean meets the Taurus Mountains in Turkey and the Zagros Mountains in Iran and Iraq, which rise to well over 4,000 metres, as well as the Golan Heights: this used to mean a lot of snow, that melts in spring, raising the water levels of rivers sufficiently to last through the dry season.

«But this blessing is soon to disappear due to human-induced climate change» warns Pinhas Alpert Pinhas, professor of atmospheric sciences at Tel Aviv University (Israel) and Research Line 5 Water Cycle co-leader. Using a new climate change model, developed by the Meteorological Research Institute in Tsukuba (Japan), he foresees that the Fertile Crescent will lose its current shape and may disappear altogether by the end of this century.

«The model is unique since allows to simulate the climate with a spatial resolution of 20 kilometres, a scale previously unobtained. As the mountains are the source of the water in this region, a high-resolution model that is able to accurately resolve topography is necessary to project future changes in water resources», adds Pinhas.

Pinhas' team simulated two possible scenarios: a moderate one, in which the average air temperature in the region climbs by 2.6°C, compared to the preindustrial period, by the end of this century, and an extreme one, in which temperatures rise by 4.8°C. Even the more optimistic hypothesis suggests that the Euphrates would carry 30 per cent less water than today and in the Jordan River the water flow would shrink by as much as 80 per cent. But, if you consider the extreme scenario, the region between the Euphrates and Tigris will lose two-thirds of its current levels of rainfall and the river Jordan will nearly dry up. In the worst case, no irrigation systems could sustain agriculture any more. The cradle of agriculture, livestock farming and civilization would give up to desert.

For further details, read [here](#) and [here](#).