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India's water use 'unsustainable'

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Minute differences in the Earth's gravitational pull cause the two craft to shift slightly in their positions relative to one another.

The mission can measure groundwater depletion because the amount of water in aquifers has a small gravitational attraction for the satellites.

Three years ago, Grace scientists noted a loss of water in parts of Africa - but the Indian result is more striking.

"Over the six-year timeframe of this study, about 109 cubic kilometres of water were depleted from this region - more than double the capacity of India's largest reservoir is gone between 2002 and 2008," Dr Rodell told the BBC.

The northwest of India is heavily irrigated; and the Indian government's State of the Environment report, published on Tuesday, noted that irrigation increased rice yields seven-fold in some regions compared to rain-fed fields.

Dr Raj Gupta, a scientist working for the International Maize and Wheat Improvement Center (CIMMYT), said that the current drought would lead to more groundwater extraction.

"Farmers receive no rains so they are pumping a lot more water than the government expected, so the water table will fall further," he said.

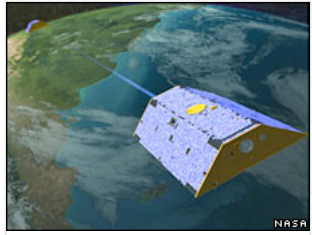
"The farmers have to irrigate, and that's why they're pumping more water, mining more water. The situation has to stop today or tomorrow."

Dr Gupta noted that some farmers might be able to switch from rice to crops that demand less water, such as maize or sorghum.

But, he said, that would depend on government policies - which have traditionally promoted rice - and on market demand.

Climate change is likely to be a constraint too, with the area of South Asia suitable for wheat forecast to halve over the next 50 years.

Richard.Black-INTERNET@bbc.co.uk



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