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Groundwater vanishing in North India, says NASA

Staff Reporter

BANGALORE: Groundwater levels in Punjab, Rajasthan, Haryana and Delhi are falling dramatically — by one foot a year — a trend that could lead to “extensive socio-economic stresses” for the region’s 114 million residents, says a scientific paper based on the U.S. National Aeronautics and Space Administration’s satellite imagery.

A staggering 109 cubic km of groundwater has been lost in just six years (2002-08) — a figure twice the capacity of India’s largest surface reservoir Upper Wainganga and “much more” than the government’s estimation, says the paper published in the latest issue of international journal *Nature*.

The depletion is caused entirely by human activity such as irrigation, and not natural climatic variability, concludes the study co-authored by Matthew Rodell, a hydrologist with NASA. Groundwater is being pumped out faster than it is being replenished.

The finding is based on images from NASA’s Gravity Recovery and Climate Experiment (GRACE), a pair of satellites that sense changes in Earth’s gravity field and associated mass distribution, including water masses stored above or below the Earth’s surface.

Between August 2002 and October 2008, the region lost 109 cubic km of groundwater, almost triple the capacity of the largest man-made reservoir in the U.S., Lake Mead. If measures are not taken to ensure sustainable groundwater use, consequences may include collapse of agricultural output and severe shortages of potable water, said Professor Rodell.

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Written by Administrator

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Depletion is likely to continue until effective measures are taken to curb groundwater demand which could propel severe shortages of potable water, reduced agricultural productivity, conflict and suffering, the research paper added. Rajasthan, Punjab, Haryana and Delhi are semi-arid or arid. The region has benefited from the Green Revolution “fuelled largely by increased production of groundwater for irrigation.”