Seminario de Microeconomía Aplicada - A tale of two roads: groundwater depletion in the north China plain

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Resumen del documento: There is a large literature on the relationship between infrastructure and economic development, but few papers study the effect of infrastructure on the sustainability of natural resources. We examine the effect of the arrival of two new national highways on ground water levels in a small agricultural county in the North China Plain - a region that produces most of the nation's food grains. We first develop a conceptual framework to show that farmers closer to the highway devote more acreage to crops that are water intensive. We then use a unique GIS-referenced dataset of all the 12,160 tube wells in this county to show that highway construction accelerates the drilling of new wells in farms closer to the highway. In addition, there is greater depletion of the groundwater in wells closer to the two highways relative to wells located farther away. Our estimated depletion rates near the two roads are at least 5 times higher relative to mean depletion rates in the North China Plain. We show suggestive evidence that depletion is caused by a switch from subsistence to commercial cropping, and intensification of farming practices closer to the highway. These results suggest that the resource cost of new infrastructure building may be significant and needs to be incorporated in benefit-cost analysis.

Tiempo de exposición: 1:30 p. m. a 2:30 p. m.

Fuente: https://www.banrep.gov.co/en/seminario-microeconomia-aplicada-tale-two-roads-groundwater-depletion-north-china-plain