

Agricultural technologies could increase global crop yields up to 67%

Written by Administrator

Wednesday, 19 February 2014 09:05 - Last Updated Wednesday, 19 February 2014 09:24

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Increased demand for food due to population and income growth, and the impacts of climate change on agriculture will ratchet up the pressure for increased and more sustainable agricultural production to feed the planet. A new report by the International Food Policy Research Institute (IFPRI) measures the impacts of agricultural innovation on farm productivity, prices, hunger, and trade flows as we approach 2050 and identifies practices that could significantly benefit developing nations.>

The report, *Food Security in a World of Natural Resource Scarcity: The Role of Agricultural Technologies*, examines 11 agricultural practices and technologies and how they could help farmers around the world improve the sustainability of growing three of the world's main staple crops—maize, rice, and wheat.

Using a first-of-its-kind data model, IFPRI pinpoints the agricultural technologies and practices that can most significantly reduce food prices and food insecurity in developing nations. The study profiles 11 agricultural innovations: crop protection, drip irrigation, drought tolerance, heat tolerance, integrated soil fertility management, no-till farming, nutrient use efficiency, organic agriculture, precision agriculture, sprinkler irrigation, and water harvesting.

Findings from the study include:

- No-till farming alone could increase maize yields by 20%, but also irrigating the same no-till fields could increase maize yields by 67% in 2050.
- Nitrogen-use efficiency could increase rice crop yields by 22%, but irrigation increased the yields by another 21%.
- Heat-tolerant varieties of wheat could increase crop yields from a 17% increase to a 23% increase with irrigation.

If farmers were to stack agricultural technologies in order of crop production schedules, the combination of agricultural technologies and practices could reduce food prices by up to 49%

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for maize, up to 43% for rice, and 45% for wheat due to increased crop productivity. The technologies with the highest percentage of potential impact for agriculture in developing countries include no-till farming, nitrogen-use efficiency, heat-tolerant crops, and crop protection from weeds, insects, and diseases.

“One of the most significant barriers to global food security is the high cost of food in developing countries,” said Mark Rosegrant, lead author and Director of IFPRI’s Environment and Production Technology Division. “Agricultural technologies used in combinations tailored to the crops grown and regional differences could make more food more affordable—especially for those at risk of hunger and malnutrition in developing countries.”