

## Zero tillage reduces water demand in farms

An agricultural technique known as 'zero tillage' has reduced the demand for water in rice and wheat farming on almost a million hectares of land in India, Pakistan and Bangladesh, the science site SciDev.Net reports.

Scientists from the International Maize and Wheat Improvement Centre (CIMMYT) and the Rice Wheat Consortium for the Indo-Gangetic Plains - a network of scientists and nongovernmental organisations - carried out the investigation.

Their work is highlighted in the World Bank's World Development Report 2008: Agriculture for Development.

This is the first time in 25 years that agriculture's role in development has been the focus in the World Bank's annual development report. It calls for increased funding for agricultural research and for making agriculture central to the development agenda.

Rice and wheat are important for south Asia's food security, but yields have recently been stagnating and soil quality deteriorating.

A 'rice-wheat' farming system has a summer 'wet' crop of rice - during the monsoon season - and a winter 'dry' crop of wheat.

The scientists introduced zero tillage - also known as conservation tillage - to farmers in the region. Zero-tillage involves planting seeds into soil that hasn't been tilled after the harvest of the previous crop. The wheat seeds germinate in residual water left by the rice crop, saving up to a million litres of water per hectare.

Atique Rehman, an agricultural student at the University of Agriculture, Faisalabad, Pakistan, told SciDev.Net, 'In the conventional method, soil needs to be soaked, which requires much more irrigation water. In zero tillage, soaking irrigation is skipped as sufficient moisture is available after the harvesting of the rice crop.'

With zero-tillage technology, farmers can produce higher yields and reduce production costs by up to ten percent. They also save on diesel for tractors, and the fertility and structure of the soil improves.

The report also highlights researchers' efforts to produce drought-tolerant maize for Africa. Creating new varieties can take decades of research, but these are now reaching farmers and yields are stabilising.

The report warns that the production of improved crops is a lengthy process and cannot be undertaken without proper investment.

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