‘Alternative cereals can save water’

The study found that rice is the least water-efficient cerealM. SAMRAJ

If Indian farmers were to switch from growing rice and wheat to ‘alternative cereals,’ such as maize, sorghum, and millet, it could reduce the demand for irrigation water by 33%. This could also improve nutritional availability to consumers, according to an analysis by researchers from the U.S.-based Earth Institute, Columbia University and Indian School of Business, Hyderabad.

For their analysis, the scientists considered water as well as cereal-production data from 1996-2009. Because actual water consumption data was not available, they used a proxy — Crop Water Requirement (CWR), which is the product of the water required by a crop and the harvested area — to calculate water consumption in every district in this period.

In this time, cereal production grew by 230%. Although the combined production of alternative cereals was larger than that of wheat in the 1960s, their relative contribution to the cereal supply has steadily dwindled.

Yet, alternative cereals disproportionately account for the supply of protein, iron, and zinc among kharif crops. At the same time, total CWR demand for Indian cereal production increased from 482 to 632 km3 per year during the study period.

The nub was that rice is the least water-efficient cereal when it came to producing nutrients, and was the main driver in increasing irrigation stresses.

Better production

Replacing rice with maize, finger millet, pearl millet, or sorghum could save irrigation and improving production of nutrients such as iron by 27% and zinc by 13% , according to the report

“Alternative cereal production can help distribute nutrient production across the country and reduce the impact of a single local climate shock to national grain production,” the study said.

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