

# Farm reform, biotech are key to feeding world by 2050: study

January 12 2011, by Richard Ingham

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A Kashmiri man cut and gathers rice stalks into a bundle in a field on the outskirts of Srinagar in September 2010. Massive changes in farming practices, eating habits and consumption will be needed to feed Earth's population sustainably when it hits nine billion in 2050, French scientists warned on Wednesday.

Massive changes in farming practices, eating habits and consumption will be needed to feed Earth's population sustainably when it hits nine billion in 2050, French scientists warned on Wednesday.

In under 40 years, the world will have to make farming more productive but less dependent on [harmful chemicals](#), curb food losses and waste, protect the environment and reduce agriculture's exposure to disastrous price swings, they said.

Their study, called Agrimonde (Agriworld in French), is co-authored by specialists at France's National Institute for Agricultural Research (INRA) and the International Cooperative Centre for Agronomical Research for Development (CIRAD).

"This exercise is undertaken at a very specific human history, at a time when the population today is seven billion," CIRAD president Gerard Matheron said at a press conference. "World [agriculture](#) faces a major challenge."

Last week, the UN's Food and Agriculture Organisation (FAO) reported that [food prices](#) had hit their highest level ever and World Bank President Robert Zoellick warned that rising prices for staples "are re-emerging as a threat to global growth and social stability."

Riots in Algeria, meanwhile, left five people dead, hundreds wounded and about 1,000 in jail, prompting the authorities to promise to cut food prices.

The Agrimonde study said that North Africa and the Middle East, Asia and sub-Saharan Africa, all with fast-growing populations today, will be heavily dependent on imported food in 2050.

It puts forward two scenarios -- both relatively optimistic -- by which the planet's expected nine billion humans are fed by 2050.

Under a business-as-usual scenario, all regions in the world would enjoy strong economic growth, invest heavily in research, innovation, education, health and infrastructure.

But, under this scenario, there is not a high priority to the environment, with resulting damage to ecosystems.

Under the second scenario, environmental integrity is a key factor.



Belarussians harvest cranberries on a lake near the village of Selishche, some 300 kms outside Minsk, in October 2010. Massive changes in farming practices, eating habits and consumption will be needed to feed Earth's population sustainably when it hits nine billion in 2050, French scientists warned on Wednesday.

To achieve this goal in sustainability, rich countries in particular would have to reduce excessive consumption that leads to obesity and tackle loss and waste in food distribution and use that today runs at around 25 percent of production.

Agriculture everywhere would have to be more economical in fossil fuels and make less use of chemicals.

"However, this would not be a return to archaic agriculture, but instead require innovation and social change," said CIRAD researcher Bruno Dorin, who co-authored the study.

Genetic manipulation of plants to boost yields would be necessary. However, smarter ways of traditional cross-breeding are emerging as good alternatives to genetic engineering, which is a hot political issue in

many countries, he said.

At the same time, there would have to be changes in trade rules so that the [food](#) supply line to importing countries becomes stronger and more resilient, thus easing the price shocks that hit producer or customer.

"The necessary and foreseeable growth of agricultural exchanges coming from OECD (Organisation for Economic Cooperation and Development) countries, the ex-Soviet block and Latin America, and going towards Africa, Asia and the Middle East needs to be stabilised and regulated," says the paper.

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