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Harvests and farmland

Unyielding

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SOME of the world's most significant problems never intrude upon headlines. They make themselves felt indirectly, if at all. One example comes from agriculture. Food riots and hunger make news; so, occasionally, do land grabs in developing countries or arguments over genetically modified foods. But the trend that underlies and helps explain these matters is rarely talked about. This is the decline, sometimes reversal, in the growth in yields of some of the world's staple crops. All the more reason to welcome a new study by the University of Minnesota and McGill University in Montreal, which looks in some detail at where, and how far, this decline is occurring.

The authors take a vast number of data points – 2.5m over almost half a century, 1961-2008 – for the four crops that are most important for people's nutrition: rice, wheat, maize and soyabeans. They find that on between 24% and 39% of all harvested areas (depending on the crop), the improvement in yields that took place before the 1980s then slowed down or declined in the 1990s and 2000s. That is a deterioration over a very substantial area, even though it is worth pointing out that yields are continuing to improve on a majority of the world's farmland.

There are two worrying features of the slowdown. One is that it has been particularly sharp in the world's most populous countries, India and China. Their ability to feed themselves has been an important source of relative stability both within the countries and on world food markets. That self-sufficiency cannot be taken for granted if yields continue to slow down or reverse.

Second, yield growth has been lower in wheat and rice than it has been in maize and soyabeans. This is problematic because wheat and rice are more important as foods: between them, they account for around half of all calories consumed. Maize and soyabeans are more important as feedgrains (ie, they are fed to livestock or used to produce fuel). The authors note tartly – and accurately – that “we have preferentially

focused our crop improvement efforts on feeding animals and cars [rather than on] crops that feed people and are the basis of food security in much of the world.”

The report qualifies the more optimistic findings of another new paper, “Peak Farmland and the prospect for land sparing,” which suggests that the world will not, after all, have to dig up a lot more land for farming in order to feed 9 billion people in 2050, as the Food and Agriculture Organisation (among others) has argued.

Instead, it says, thanks to slowing population growth, land currently ploughed up for crops might be able to revert to forest or wilderness. This could happen. The trouble is that the forecast assumes continued improvements in yields, which may not actually happen.

The Minnesota/McGill report ought to be yet another warning about the dangers of neglecting research into crop improvements. The increase in yields during the 1970s and 1980s was the direct result of the improved seeds of the Green Revolution; the more recent slowdown tracks in the decline in basic research since then. It is no coincidence that the most significant crop research is now being done by large companies such as Monsanto, Pioneer and Syngenta, and has concentrated upon corn and soya - the crops which are doing better. Demonising these firms is not a very good way to go about feeding people.