

The Green Revolution did not increase poverty and hunger for millions

To the editor — In the June 2018 issue of *Nature Plants*, Associate Editor Ryan Scarrow, in a book review entitled ‘Botanical Imperialism’ erroneously regurgitates the myth that the Green Revolution “increased hunger and poverty for millions while protecting and increasing crop exports for global markets”¹.

There are several sources of data (the World Bank and the UN Food and Agriculture Organisation, among others) that give lie to this claim, most prominently compiled into visual representations by the online publication, *Our World in Data* (www.ourworldindata.org) by researchers at the University of Oxford. The data clearly show that the share of world population living in extreme poverty fell sharply during the years of the Green Revolution, previously defined as 1966–1985 (ref. ²). Data from the Food and Agriculture Organisation (FAO) also shows that the same period saw an almost identical increase in per person calorie supply in poor and wealthy countries. Thus, it is hard to accept the argument that the Green Revolution caused an increase in poverty and hunger when the aggregate data clearly shows that there was no such increase in poverty and hunger in the countries that adopted Green Revolution advances.

The Green Revolution also saw impressive gains in yields of staple food crops like wheat and rice, even in large developing countries like India and

China that embraced Green Revolution advances in farm mechanization and made significant public-sector investments in irrigation and crop improvement. For instance, in developing countries, yields of staples as diverse as wheat, rice, potato and cassava increased by 36–208% (ref. ²). These increases are also associated with the adoption of Green-Revolution-improved crop varieties, beginning in Asia (82% adoption in 1998) and then later in sub-Saharan Africa (70% adoption by 2005)². In terms of environmental benefits, it has also been shown that the Green Revolution saved 18–27 million hectares of forested land and pasture from being converted to farmland, much of it in the developing world³.

Clearly, the Green Revolution played an enormous role in raising livelihoods and providing greater food security in the developing world. It vividly exploded the Malthusian fears promulgated by Paul Ehrlich’s, *The Population Bomb* and the Paddock brothers’ *Famine-1975!* It is true that the advances of the Green Revolution failed to manifest in parts of the globe, particularly on the African continent; this does not mean however that it was the cause of poverty and hunger in these areas. Furthermore, while the evidence also suggests that gains due to the Green Revolution were limited in marginal agricultural environments, and that the reductions in poverty were unequally distributed, it is wrong to

dismiss the important contributions made by agricultural scientists and researchers in the past. A more progressive view is to champion the adoption of Green Revolution measures, such as renewed public-sector support for crop improvement, while also addressing the equally important, and now better-studied, environmental impacts of agricultural intensification. We must not forget that, but for the Green Revolution, millions of our fellow humans from the Global South would simply not be alive today. More fundamentally, while we navigate the challenges of ensuring sustainable food security over the next fifty years, it is important to be guided by an honest evaluation of the facts, and the successes and failures of the past. □

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Published online: 4 October 2018

<https://doi.org/10.1038/s41477-018-0240-8>

References

1. Scarrow, R. *Nat. Plants* **4**, 316 (2018).
2. Pingali, P. L. *Proc. Natl Acad. Sci. USA* **109**, 12302–12308 (2012).
3. Stevenson, J. R., Villoria, N., Byerlee, D., Kelley, T. & Maredia, M. *Proc. Natl Acad. Sci. USA* **110**, 8363–8368 (2013).

Competing interests

The author declares no competing interests.