JOURNAL ARTICLE

The Global Supply and Demand for Agricultural Land in 2050: A Perfect Storm in the Making?

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American Journal of Agricultural Economics, Volume 93, Issue 2, January 2011, Pages 259–275, https://doi.org/10.1093/ajae/aaq189
Published: 01 January 2011

Extract

Over the past three years, there has been a convergence of interest in the global farm and food system and its contributions to feeding the world's population as well as to ensuring the environmental sustainability of the planet. The 2007/2008 commodity crisis underscored the vulnerability of the global food system to shocks from extreme weather events, energy and financial markets, as well as government interventions in the form of export bans and other measures designed to avoid domestic adjustment to global scarcity. We have learned that a "perfect storm" in which all these factors coincide can have a devastating impact on the world's poor, as well as pressuring the world's natural resource base. As we look ahead to the middle of this century, will the world's agricultural resource base be up to the task of meeting the diverse demands being placed on it?

The number of people which the world must feed is expected to increase by another 50% during the first half of this century. When coupled with significant nutritional improvements for the 2.1 billion people currently living on less than $2/day (World Bank 2008, p.1), this translates into a very substantial rise in the demand for agricultural production. FAO estimates the increased demand at 70 percent of current production, with a figure nearer 100% in the developing countries (Bruinsma 2009, p.2). Over the past century, global agriculture has managed to offer a growing population an improved diet, primarily by increasing productivity on existing cropland. However, there are signs of slowing yield growth for key staple crops. And public opposition to genetically modified crops has slowed growth in the application of promising biotechnology developments to food production in some parts of the world. At the same time, the growing use of biomass for energy generation has introduced an important new source of industrial demand in agricultural markets (Energy Information Agency 2010). To compound matters, water, a key input into agricultural production, is rapidly diminishing in availability in many parts of the world (McKinsey & Co 2009), and many soils are degrading (Lepers et al. 2005).