
GLOBAL PERSPECTIVES

Paper 1 Written paper

9777/01

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1 hour 30 minutes

RESOURCE BOOKLET

READ THESE INSTRUCTIONS FIRST

This Resource Booklet contains Documents 1 and 2 which you should use to answer the questions.

You should spend approximately 10 minutes reading the documents before attempting to answer the questions. This is allowed for within the time set for the examination.



This document consists of **3** printed pages and **1** blank page.

The documents below consider the Economics of Food Production. Read them **both** in order to answer **all** the questions on the question paper.

Document 1: adapted from Patrick Westhoff's introduction to his book *The Economics of Food Production*, published in 2010. The book is the result of work done by the Policy Research Institute, a joint body of the University of Missouri and the Iowa State University. He is an economist who worked for the US Senate Committee on Agriculture and now teaches and advises graduate students in Agricultural Economics.

Food prices are literally a matter of life and death for some. Front-page stories highlighted a sudden rise in food prices and a December 2007 cover story in *The Economist* proclaimed "The End of Cheap Food." U.S. consumer food prices rose 4 percent in 2007, and the rate of food price inflation jumped to 5.5 percent in 2008. The rise in food prices was a concern in the United States, but a crisis in much of the developing world. The average U.S. family of four spent \$8,671 on food in 2007, and rising food prices made it harder for families to make ends meet. Sharply higher prices for staple foods meant low-income families were faced with a stark choice of eating less or cutting back on other necessities. The Food and Agriculture Organization estimates that millions of people were added to global hunger rolls, leaving 915 million people undernourished.

Was this just a short-lived crisis, or are higher food prices likely to be the norm in the years ahead?

The role of biofuels in the increase has been controversial. Some have laid most of the blame for higher food prices on the growth in biofuel production. The more grain and vegetable oil used to produce biofuels, the less is available to feed people.

On the other side of the argument, biofuel defenders contend that the role of biofuels in raising food prices is minimal. The share of the world's crops used to produce biofuels remains very small and farmers can and will increase production to satisfy the demand for both food and fuel.

A lot of the reporting did get parts of the story right. Expanding biofuel production *has* increased the demand for grain and vegetable oil. Higher energy prices *do* increase the price of producing, processing, and transporting food and encourage the growth of the biofuel industry. Government policies *did* contribute to the increase in world food prices by supporting growth in biofuel production and restricting food exports. Poor weather in 2006 and 2007 *did* reduce grain production. Economic growth in China and elsewhere *has* led to changing diets.

However, the story is more complicated. It is true that poor weather reduced grain yields in 2007 in Australia and Europe, but production elsewhere actually increased. Rising incomes in middle income countries *do* result in dietary changes that affect world food markets, but these didn't suddenly begin in 2006. Much of the reporting would have led one to believe that food prices could only increase, yet prices for major staple foods declined sharply in the final months of 2008.

The story of biofuels and food prices is anything but simple. The biofuel industry did not fall unexpectedly from the sky, but grew rapidly in response to government policies and energy market developments.

Food prices will continue to be volatile as long as the weather varies, the world economy experiences periods of growth and recession, petroleum prices rise and fall, and politicians can change the rules of the game.

Document 2: adapted from an article on the BBC News environmental topics website 'The Green Room', by Dr Peter Baker. Dr Baker is a commodities development specialist at the Commonwealth Agricultural Bureau International (CABI), a not-for-profit agricultural research organisation.

Reforming the economics of food production and supply would be beneficial for a number of environmental and social problems. A key issue is understanding the energy involved in putting food on your plate.

It's perfectly reasonable to want to assist farmers to build a better life and to facilitate this process through aid, technical assistance and capacity building. But the road to hell is paved with good intentions.

I had planned to call this article Supermarkets, Smallholders and the Second Law of Thermodynamics. The Second Law is about order; the Universe is inexorably heading to increased disorder. This need not be a problem; we can increase order locally by hard work, by expending energy. But we create greater disorder (heat and waste) elsewhere. If there is plenty of energy and plenty of "elsewhere", then we don't have to worry. The whole world hasn't worried.

Commodity chains are living things, creating highly ordered products and emitting significant waste and heat. A recent study of Nicaraguan coffee production showed that the total energy embodied in coffee exported to several countries was not compensated by the dollar price paid for that energy. Essentially, the country is exporting subsidised energy. It could be that coffee is the best way for farmers to earn a living. But a country's decision-makers should wonder about the long term policy, the true value of exports and how sustainable commodity chains will be in an energetically expensive future.

We are intervening in complex systems. The argument about the cost to the environment versus the gains to poor rural farmers has its pros and cons. It's about different sorts of sustainability and the clash of different interests.

The economic argument, revealed through agribusiness plans, may be strong. But these are short-term positions. It's no longer a matter of a few agribusiness operations in a few developing countries. With the EU's Economic Partnership Agreements, countries in the Africa, Caribbean and Pacific (ACP) group are on course to open their borders to food trade, and will be encouraged to export whatever products they can to the EU.

Agribusiness operations in under-developed countries are highly organised businesses producing products which consume a lot of energy. Trucks carrying the produce along bumpy rural roads sometimes pass food aid trucks coming in the opposite direction. Some \$45m (£22.5m) of food aid came from America to Kenya last year. Even before its sea voyage, the calorific value of US wheat is only twice the amount of calories expended to produce it. Compare this with cassava production in Tanzania where 23 times the calorific value is gained for each calorie of human energy input.

Is it energetically sound, socially advisable and economically sensible to encourage such long two-way supply chains that evolved in a low-cost energy era? Could it be more sustainable and cost effective to pay farmers a "fair" price to develop food production for local markets – based on costs of fuel, importing food, the risk of the supply chain collapsing? Surely at some point, say between \$50 and \$500 per barrel of oil, it no longer makes sense to simultaneously export and import food high in energy consumption.

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Copyright Acknowledgements:

Document 1 © adapted: Patrick Westhoff; *The Economics of Food Production*; Policy Research Institute, Universities of Missouri & Iowa State; 2010.
Document 2 © adapted: Dr Peter Baker; *The Green Room*, <http://www.news.bbc.co.uk>; April 2012.

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