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**GLOBAL PERSPECTIVES AND RESEARCH**

**9239/12**

Paper 1 Written Examination

**May/June 2016**

**1 hour 30 minutes**

INSERT (RESOURCE BOOKLET)

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**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.



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

The documents below consider issues related to the ethics and economics of food. Read them **both** in order to answer all the questions on the paper.

**Document 1:** adapted from *A Five-Step Plan to Feed the World*, an article written by Dr Jonathan Foley. The author is the Director of the University of Minnesota's Institute on the Environment, which is dedicated to discovering solutions to the earth's most pressing environmental problems. The article was published in the *National Geographic* magazine in 2014.

We are likely to have two billion more mouths to feed by mid-century. But sheer population growth isn't the only reason we'll need more food. The spread of prosperity across the world, especially in China and India, is driving an increased demand for meat, eggs, and dairy foods, boosting pressure to grow more corn and soybeans to feed more farmed animals. Thus, if these trends continue, they will require us to roughly double the amount of crops we grow by 2050.

Unfortunately the debate about how to respond to the global food challenge has become deeply divided. Those in favour of conventional agriculture argue that modern mechanization, irrigation, fertilizers, and improved genetics can increase crop production to help meet demand. Meanwhile, those for local and organic farms counter argue that the world's small farmers could still grow more crops without using environmentally damaging synthetic fertilizers and pesticides. Both approaches offer badly needed solutions; neither one alone gets us there. So, we would be wise to blend the best of both. From our scientific research, we propose a five-step plan that could solve the world's food dilemma: freeze agriculture's footprint; grow more on existing farms; use resources more efficiently; shift diets; and reduce waste.

For most of history, whenever we've needed to produce more food, we've simply cut down forests to make more farms. But trading tropical forest for farmland is one of the most environmentally destructive things, and it is rarely done to benefit the 850 million people in the world who are still hungry. Thus, avoiding further deforestation must be a top priority.

We also need to use resources more efficiently. Conventional farming is finding innovative ways to better target the application of fertilizers and pesticides by using such devices as computerized tractors equipped with advanced sensors and GPS (Global Positioning Satellites). In addition, organic farming can greatly reduce the use of water and chemicals by enriching soil quality and insulating it. This could result in a 58% increase in global food production.

It would be far easier to feed nine billion people by 2050, if more of the crops we grew ended up in human stomachs. Today only 55% of the calories produced from the world's crops feed people directly; about 36% is fed to livestock and 9% turned into biofuels and industrial products. Shifting eating patterns to less meat-intensive diets, even just switching from grain-fed animals to pasture-raised animals, could free up substantial amounts of grain across the world for human consumption.

To boost food availability and help protect the environment, tackling food waste would be one of the most effective methods. Up to 50% of total food weight is lost or wasted before it can be consumed. Consumers in the developed world could reduce waste by taking simple actions such as serving smaller portions, eating leftovers, and encouraging cafeterias, restaurants, and supermarkets to develop waste-reducing measures.

Taken together, this five-step plan could meet the desperate need for more than doubling the world's food supplies and dramatically cutting the environmental impact of agriculture worldwide.

**Document 2:** adapted from *Feeding Nine Billion: Five Steps to the Wrong Solution*, an article written by Dr Eric Holt Gimenez. The author is a researcher, agro-ecologist and Executive Director of Food First, an organisation with a stated aim to promote action to end injustices that cause hunger. The article was published in 2014.

*National Geographic's* article (Document 1) sets out a Five-Step Plan to Feed the World. It relies on much of the conventional wisdom expressed in food and agriculture policy circles today. However, it is wrong. The five steps are all good technological fixes. So if they are so great, why is hunger still widespread in places where they are implemented? The answer is because the plan is based on a number of false beliefs.

The first is that the world needs to increase food production by 70% by 2050 in order to feed 9 billion people. This prediction is repeated as fact by many mainstream food policy reports, even though we already grow enough food to feed 10 billion people. The prediction is based on prices not yields, excludes fruit and vegetables and does not consider unequal distribution. So, growing more is not the solution.

The plan is based on the false belief that hunger is the result of scarcity. However, it is contrary to everything we know about hunger. The 2008 and 2011 food crises both occurred during years of record global harvests, record food prices and record profits for the world's major agricultural companies. People go hungry when they are too poor to buy the food that is produced and don't have access to food-producing resources. The cause of hunger is therefore poverty. Sadly, most of the hungry people in the world are peasant farmers, who together produce nearly 70% of the world's food, but don't have enough land and are paid too poorly to make a decent living. If we really want to solve hunger, give peasant farmers more land and pay them fairly for their product. That will eliminate 70% of hunger right away.

The article mistakenly suggests that we can't end hunger because we are too busy fighting over whether conventional or organic farming is best. However, the battle is not conventional versus organic at all, but rather large single-crop agricultural companies versus smallholder diversified farming. If large industrial agriculture displaces peasant farmers and sucks wealth out of rural communities, it really doesn't matter if it is organic or conventional; it still leads to poverty and hunger.

Finally, the plan believes that a happy blend of conventional and organic farming techniques can end hunger. Suggesting 'we all just get along' by blending techniques is like asking foxes and chickens to share their best eating habits for the overall benefit of the chickens themselves. It ignores the growing monopolization of food, the massive land grabbing and the ways industrial agriculture and global markets are destroying smallholder livelihoods worldwide. The three million smallholder bankruptcies in Mexico are a well-documented example of this.

Even if we could in theory take *National Geographic's* Five-Step advice, if other steps aren't taken to protect the world's two billion peasants, they will still be condemned to poverty and hunger. So, let's drop the deceit, the technological fixes and the false beliefs, and end the injustices that cause hunger.

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