

READING PASSAGE 1

You should spend about 20 minutes on **Questions 1-13**, which are based on Reading Passage 1 on pages 2 and 3

New perspectives on food production

Solving the food problem requires scientific progress, but also an understanding of social context and cultures

Is new technology needed for global food production?

The Food and Agriculture Organization of the United Nations notes that domestic prices of staple food are continuing to increase, leading to a rise in the number of people worldwide who are chronically underfed. According to Erik Millstone, a food and agriculture researcher funded by the Economic and Social Research Council (ESRC), the natural science community tends to view world hunger as if it were a problem that could be solved simply by increasing total production. But, he says, 'Most people who are chronically hungry are so not because of the scarcity of food but because they are unable to afford what is available. In addition, the food trade is so globalised that food is often exported from areas where people are hungry and sent to countries where people already have sufficient.'

Millstone believes the problem can only be solved by changing the conditions for poor subsistence farmers and providing the support they need to grow more food. And that is not enough on its own—they also have to have facilities for storing it so that their food can be kept safe and in good condition until it is needed. But, he adds, increasing productivity through technology is not the answer. An example is the new genetically-engineered varieties of high-performance maize. The problem with these new varieties is that if you save seed and plant it again next year, its vigour has diminished. Most North American and European farmers can afford to get new seed every year; poor farmers cannot, so they need traditional varieties whose seed can be saved and replanted. Giving farmers access to credit also doesn't help; it adds risk. 'Poor farmers should not be thought of as entrepreneurs looking to invest their money. They are looking to diminish their risk.' Ultimately, he concludes, 'Instead of devoting resources to research for intensifying commercial farming, we should devote them to enhancing the techniques available to subsistence farmers, and to developing appropriate tools for them to use, because their need is the greatest. Increasing their productivity will do more to enhance food security for those who are hungry than anything else we can do.'

Looking for local solutions in the UK

In contrast to Millstone, Gareth Edwards-Jones a professor of agriculture and land use at the University of Bangor in Wales, focuses on food production in the UK. In recent years 'local food' has become fashionable in the UK without any real understanding of the issues involved. First and foremost, it is necessary to define more precisely what is meant by 'local' Is bread bought in England from an English bakery "local if the wheat it is made from was grown in Canada? Funded through the Rural Economy and Land Use Programme, Edwards Jones is studying people's perceptions of "localness" and seeking to establish whether there is any science behind the popular belief that "local is better'.

His work involves studying the carbon footprint* of foods grown in different areas of the UK, as well as such common sources of supply as Spain, Kenya and Uganda. He has made some surprising discoveries. Which has the lower carbon footprint: sugar made from sugar cane (grown in Africa), or from sugar beet flown in from Europe? The answer is sugar from sugar cane in Africa. Similarly, trucking vegetables in from Spain may have a smaller carbon footprint than growing them locally in the UK-because growing them locally requires adding all the emissions of running a heated greenhouse.

And, he asks, how far down the life cycle should you go? He discovered early in his research that the methods used to prepare foods to be eaten can have a huge impact; boiling potatoes accounts for fully half their carbon footprint. Ultimately, it's a mistake to look at just one part of the food chain. You could have a policy where you're going to really pressurise farmers to try to get emissions down, but decarbonising fuel and electricity is a much more effective method of protecting the environment; he says.

Another of Edwards-jones's research projects involved visiting farm workers in each of the above countries to assess their health and well-being. 'We found that farm workers in Kenya had better physical and mental health than the average Kenyan,' he says, attributing the difference to both better income and to the benefits-housing, schools, medical care provided by their large corporate employers. He finds it ironic that after years of 'trade not aid' all of a sudden people are starting to say the UK shouldn't be importing food from Africa.

The other problem with insisting on locally grown food, he says, is that the UK is not suited to growing most fruits and vegetables-the key elements in a healthy diet. These crops need our best land-which means demoting other crops that do grow well in the UK to lower quality land. 'There's a domino effect so that increasing self sufficiency may, from an environmental perspective, be quite bad,' he says.

*carbon footprint: a calculation of the amount of greenhouse gases produced as a result of human

Questions 1-8

Complete the notes below.

Choose **ONE WORD ONLY** from the passage for each answer.

Write your answers in boxes 1-8 on your answer sheet.

The problem of world hunger

CAUSE

Some scientists see world hunger as due to a general **1**.....of food.

But it may be because:

- hungry people cannot **2**.....
- food is not available because it has been **3**.....

SOLUTION

- provide support for subsistence farmers in growing and **4**.....their food

ADDITIONAL RECOMMENDATIONS

- don't use **5**.....to increase food production,
e.g. **6**.....varieties of maize are better for poor farmers as the seed can be
replanted
- don't provide opportunities for farmers to have **7**..... -too risky
- don't do research into intensifying commercial farming
- do improve techniques and **8**..... available to subsistence farmers

Questions 9-13

Do the following statements agree with the information given in Reading Passage 1?

In boxes 9-13 on your answer sheet, write

TRUE if the statement agrees with the information
FALSE if the statement contradicts the information
NOT GIVEN if there is no information on this

- 9** Importing sugar to the UK from other parts of Europe is less environmentally harmful than importing sugar from Africa.
- 10** The way in which some foods are cooked may affect their impact on the environment.
- 11** The best way to reduce harm to the environment is to oblige farmers to use more environmentally friendly farming methods.
- 12** Imports of food to the UK from African countries such as Kenya have fallen recently.
- 13** Growing fruit and vegetables is better for the environment than raising animals for Food.

Turn over