

Directions: In this section, you are going to read a passage with ten statements attached to it. Each statement contains information given in one of the paragraphs. Identify the paragraph from which the information is derived. You may choose a paragraph more than once. Each paragraph is marked with a letter. Answer the questions by marking the corresponding letter on *Answer Sheet 2*.

African countries must get smarter with their agriculture

- A) On the hills of central Kenya, almost lime-green with the sparkle of tea bushes in the sunlight, farmers know all about climate change. "The rainy season is no longer predictable," says one. "When it is supposed to rain it doesn't, then it all comes at once." Climate change is an issue that will affect everyone on the planet. For Africans its consequences will be particularly bitter: whereas other regions were able to grow rich by burning coal and oil, Africa will pay much of the human price without having enjoyed the benefits. "Africa only represents 2% of global greenhouse-gas emissions but it is the continent that is expected to suffer the most from climate impacts," says Mafalda Duarte, who runs the World Bank's \$8bn Climate Investment Funds.
- B) Although there are huge uncertainties as to the precise impacts of climate change, enough is known to say that global warming represents one of the main threats to Africa's prosperity. Parts of the continent are already warming much more quickly than the average: temperatures in southern Africa have increased by about twice the global rate over the past 50 years. Even if the world were to cut emissions enough to keep global warming below 1.5°C, heat-waves would intensify in Africa and diseases would spread to areas not currently affected. Farming would also be hit hard. About 40% of the land now used to grow maize(玉米) would no longer be suitable for it. Overall, it is estimated that maize yields would fall by 18-22%.
- C) Africa is particularly vulnerable, in part because it is already struggling to feed itself and it will have to vastly increase yields and productivity if it is to put food on the plates of a fast-growing population, even without climate change. The UN's Food and Agriculture Organisation reckons that by 2050 global food production would have to rise by about 70% over its level of 2009 to meet demand from a population that is growing in numbers and appetite. Much of this new demand will be in Africa. Yet the continent already imports about \$50bn-worth of food a year and that figure is expected to more than double over the next five years. Self-sufficiency is not Africa's goal, but the fact that it spends more money importing food than it does buying capital goods suggests it has room for improvement.
- D) Finding out why is not hard. Most farms are tiny, ploughed by hand and reliant on rain. More than half of Africa's people make their living from farming. Although its total harvest has climbed over the past few decades, this is mainly because there are more people farming more land. But in many places there is no spare land to farm. Plots in Rwanda are so small that you could fit 250 of them onto the average American farm. And although output per worker has improved by more than half over the past 30 years in Africa, that is still far behind the 2.5 times improvement in Asia. Yields of maize are generally less than two tonnes per hectare, a fifth the level in America.
- E) The low productivity of African farmers is reflected in national economic statistics—despite absorbing so much labour, farming generates just 15% of GDP. "They can't even feed their families," says Jennifer Blanke, a vice-president of the African Development Bank in charge of agriculture. "Farm productivity hasn't improved in many parts of Africa for 100 years."

- F) One reason is that in the first few decades of independence, many African governments neglected farming as they focused on industrialising their economies. Others damaged it by pushing down the prices that state monopolies paid for their crops in order to subsidise workers in cities with cheap food. Ghana taxed cocoa(可可粉) exports so heavily that production collapsed by half between the 1960s and 1980s, despite a jump in the global price of cocoa. Yet over the past two decades or so governments and donors have begun to look again at farming as a way of providing jobs for the 13 million young people entering the workforce each year. Much of the focus has been on getting small farmers to use fertiliser and, more important, better seeds. The results can be impressive. Improved varieties of sorghum(高粱), for instance, can produce a crop that is 40% larger than the usual variety. Infrastructure is important. A World Bank irrigation project in Ethiopia helped farmers increase their potato harvest from about 8 tonnes per hectare to 35 tonnes.
- G) Better techniques help, too. Small coffee farmers in Kenya are able to increase their incomes by 40% by following a few simple guidelines on caring for their bushes, such as trimming all but three of their stems. Many of their neighbours do not follow the advice, because it seems counter-intuitive. More stems ought to lead to more coffee beans, they say. Yet after seeing those following the advice get bigger harvests for a season or two, many others start doing the same.
- H) One way of spreading knowledge is to link farms to big buyers of their harvests. When Diageo, a British drinks giant, built a brewery in western Kenya, it wanted to use local crops to make a beer cheap enough to compete with illicit home brew. It organised farmers into groups, improved supply chains for them to get seeds and fertiliser and then agreed to buy their grain. It now provides a market to about 17,000 farmers. Across the region it has doubled its use of local raw material to about 80% over five years, says John O'Keeffe, who runs its Africa business.
- I) An even more important change is the move from traditional farming to building businesses that can profitably bring technology and investment to small farmers. Taita Ngetich, a young Kenyan, was studying engineering when he wanted to earn a little money on the side. He scraped together 20,000 Kenyan shillings (about \$200) to plant tomatoes. Everything went wrong. The crop was attacked by pests. "Then there was a massive flood that swallowed all our capital," he says. Mr Ngetich persevered by looking into buying a greenhouse to protect his plants from bugs and rain. The cheapest ones cost more than \$2,500 each, so he designed his own for half the price. Soon neighbouring farmers started placing orders with him, and now his firm, Illuminum Greenhouses, has sold more than 1,400 greenhouses that provide livelihoods to about 6,000 people. The business does not stop there; he also supplies fertiliser, high-quality seedlings and smart sensors that increase yields.
- J) Illuminum's success shows how technology can help even small farms become more productive. Because such a large share of Africa's population earns a living from agriculture, even small improvements in productivity can lift the incomes of millions of people. But over the longer run small-scale farming can go only so far, especially in the face of climate change and population pressure.
- K) "If we really want to lift people out of poverty we have to finance projects that will get them an income of at least \$100 a month so that they can pay for health care and education," says Mr Ngetich. "Projects that give them an extra \$2 a month from growing beans or maize aren't going to get them there." Getting those big jumps will need better jobs in factories and cities.
36. It is said that agricultural productivity in many African countries has remained low for a century.
37. Building connections between farms and major purchasers of their produce can promote African farmers' use of advanced farming techniques.

38. Parts of Africa are getting warmer much faster than the average, with southern Africa witnessing roughly twice the global warming rate over the last half century.
39. Improved farming practices have enabled Kenyan farmers to increase farm produce remarkably.
40. Africa is especially susceptible to the effects of global warming partly because it has difficulty feeding its increasing population even without climate change.
41. The use of fertiliser and improved seeds can help Africa's small farmers impressively increase crop yields.
42. It has proved even more important to shift from traditional farming to setting up businesses that can bring technology and investment to small farmers in Africa.
43. Everyone in the world will have to bear the consequences of climate change, especially Africans.
44. Improvement in farm output per worker in Africa falls far short of that in Asia.
45. In the long term, the potential for small farms in Africa to increase productivity is quite limited, especially owing to the warming climate and a growing population.