

Answer ALL questions. Write your answers in the spaces provided.

Some questions must be answered with a cross in a box ☒. If you change your mind about an answer, put a line through the box ☒ and then mark your new answer with a cross ☒.

- 1 Read the passage below. Use the information in the passage and your own knowledge to answer the questions that follow.

Offshore or freshwater fish farming

Fish farming in fresh water and in the sea offers the potential to increase the amount of fish harvested whilst protecting wild fish stocks. Offshore or fish farming at sea has less risk of serious injury or death to people than catching fish by deep sea fishing.

Some scientists predict that smart fish farming at sea could increase ocean fish production by an estimated 21 million tonnes from the 2020 value to 44 million tonnes by 2050. Other estimates suggest that fish farming at sea, using an area the size of Lake Michigan, might produce the same amount of seafood as all of the world's wild-caught fisheries. 5

Fish farming at sea is done anywhere from three to 200 miles away from the coast. The fish produced are often Atlantic salmon, seabass and cobia. The aim is to reduce the environmental impact of fish farming near the coast by moving them further away from sensitive shorelines. This limits the impact of disease, pollution and pests such as sea lice. Further out to sea, and at deeper depths, the water movement is often faster. 10



(Source: © Tiwiplusk / Shutterstock)

Fish farm at sea



(Source: © FarisFitrianto / Shutterstock)

Freshwater fish farm

Critics of fish farming at sea claim that it will be more difficult to monitor and regulate any environmental impact and that pollution, disease and pests would still impact the surrounding waters. A major risk of farming at sea is the exposure to high winds and water speeds, increasing the risk of all the fish escaping. In 1997, 300 000 farmed Atlantic salmon escaped into the Pacific Ocean. Wild fish are attracted to the farms by the scent of fish food. These wild fish are at risk of being hit by ships travelling to and from the large fish farms. 15 20

In contrast, other scientists support the development of fish farming in fresh water. Freshwater fish farms have increased in numbers steadily in the past 30 years. Asia is the main part of the world where this has happened. It is relatively cheap and easy to grow freshwater fish in small ponds. Fish farming provides incomes for many family farms, workers and small businesses, as well as jobs. 25



The main species produced by freshwater farming are carp, tilapia and catfish. These fish are herbivores or omnivores. In the farms they are fed small amounts of fish to speed up growth, but their main diet is the by-products of crops like rice, groundnut and soy. Farmed freshwater fish are an affordable food for millions of low- and middle-income consumers.

30

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA

DO NOT WRITE IN THIS AREA



P 7 5 8 1 9 R A 0 3 2 4