



## Smart agriculture

See page 95 **Useful Expressions**

〈音声スクリプト〉  
Listen to the recording and answer the True or False questions that follow.

Passage script → p.101

Questions

1. The Netherlands is a good example of the successful use of smart agriculture.
2. The export value of the Netherlands' agricultural products in 2020 was the highest in the world.

CD ②-2



Listening Quiz Q1. True Q2. False

CD ②-3~4/5 (Faster)

Read the dialog between Meg and Ken. They are talking about the news article below about smart agriculture.

**Ken:** Hi, Meg. Look at this interesting article I found about smart agriculture.

**Meg:** Smart agriculture? What's that?

**Ken:** It means using modern technologies like AI to make farming more efficient. For example, AI can use data from soil sensors to automatically adjust the amount of water that crops are given. This kind of innovative technology will be a real game changer for agriculture!

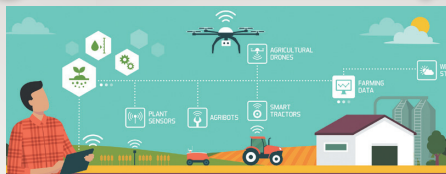
**Meg:** I'm sure it will. But won't you feel sad to see traditional farming practices disappear?

**Ken:** Well, maybe, but new technology will make farmers' lives much easier.

CD ②-6/7 (Faster) / 8 (英Ver.)

### Smart Agriculture City

By Ueno Aya,  
**MINAMI NEWS**  
July 7, 2023 | Japan,  
agriculture, technology,  
aging society



Minami City—The city government has started what it calls a “Smart Farm Project” to respond to climate change and the severe labor shortage in agriculture. “By making full use of new technologies such as artificial intelligence (AI) and the Internet of Things (IoT), smart agriculture makes farming more efficient and increases crop production,” a city spokesperson said.

#### Farmers' average age in Minami City

Year	Average age
2002	49.9
2007	53.1
2012	55.4
2017	58.6
2022	59.9

**A. Speak (Interaction)** You can share your ideas about smart agriculture with your classmates.

**B. Speak (Presentation)** You can give a 1-minute presentation about smart agriculture.

**C. Write** You can write about 90 words on whether smart agriculture will become common in Japan.

**CD②-9**

5 **Task 1** Answer the questions below and complete the chart. Then compare your answers with your partner's.

**About the dialog**

(1) How does Ken explain smart agriculture?

He says it means using modern technologies like AI to make farming more efficient.

10 (2) How can AI use data collected by soil sensors?

(AI can use data from soil sensors) to automatically adjust the amount of water that crops are given.

(3) How does Ken think new technology will change farmers' lives?

He thinks it will make their lives much easier.

**About the news article**

15	① When was this article published?	July 7, 2023
	② Why has the city started the Smart Farm Project?	To respond to • climate change • the severe labor shortage in agriculture
20	③ According to the city spokesperson, what changes will smart agriculture bring about?	• (It will) make farming more efficient. • (It will) increase crop production.

**CD②-10**

**Task 2** Think about the following question and share your ideas with your classmates. Use the article and table on page 36 to help you.

*What are the advantage(s) and disadvantage(s) of smart agriculture?*

25	<b>Advantage(s)</b>	<ul style="list-style-type: none"> <li>Needs less human labor</li> <li>Easy to control crop quality</li> <li>Raises food sufficiency</li> </ul>
	<b>Disadvantage(s)</b>	<ul style="list-style-type: none"> <li>Requires some IT skills</li> <li>Machines and technologies cost a lot.</li> <li>Machines may break down.</li> </ul>

**Hints** less human labor / control crop quality / food sufficiency / IT skills / cost ... etc.

Your ideas

Smart agriculture may solve the labor shortage in agriculture, but acquiring the machines and other IT tools needed will cost a lot of money. I think it will take some time, therefore, for smart agriculture to become common.

Other students' ideas

The machines and IT tools needed for smart agriculture will certainly cost a lot, but they will pay for themselves in the long run. Moreover, smart agriculture will attract young people who are familiar with IT tools.

**Task 3**

Read Ken's essay on the following topic: Do you agree that smart agriculture will become common in Japan in the future?

I think smart agriculture will become common in Japan in the future for two reasons. First, the farming industry in this country faces a serious labor shortage. If machines can take over much of the work that farm workers currently do, the problem will be solved. Second, smart agriculture is more eco-friendly than traditional farming. For example, AI can use big data to calculate the minimum amount of pesticide needed to treat a particular area. Such measures will minimize the damage caused by farming, making farming much more sustainable.

Now follow the steps below to prepare to write an essay on the same topic as Ken's.

① Write down as many reasons as you can think of for agreeing or disagreeing.

Agree	Disagree
<i>e.g. Japan's farming population is growing older.</i>	<i>e.g. Machines are expensive.</i>

**Hints** attract young people / increase agricultural productivity / balance work and private life / require specialized knowledge ... etc.

② Share your ideas with your classmates. Write down any interesting ideas they come up with.

- Smart agriculture will change the image of farming, so it will attract more young people.
- Introducing new technologies is difficult for people without specialized knowledge, so it would be a great burden on farmers.

③ Decide whether you agree or disagree, and then write down two ideas to support your position. Make sure your sentences include details or examples.

Your position: Agree / **Disagree**

- The machines needed for smart agriculture cost a lot of money, and not every farmer will be able to afford them.
- Japan's farming population is growing older, and many farmers will be reluctant to use modern technologies.

**Task 4**

Use the information on page 36 and the notes on page 38 to write about 90 words on the same topic as Ken's.

I do not think smart agriculture will become common in Japan in the future for two reasons. First, the machines that are needed cost a lot of money. Many farmers in Japan are self-employed and operate only small businesses, so they will not be able to afford to buy or rent expensive machines. In addition, Japan's farming population is growing older, and I am sure many farmers would rather use their own experience than rely on modern technologies. For them, growing crops is something that should be done with the hands, not with machines.



**TRY**

Give a presentation to your classmates about the essay you have written.

**CAN-DO Self-review**

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	Excellent (^o^)	Good (^_^)	Need to improve (>_<)
<b>A. Speak (Interaction)</b>	スマート農業について、適切な英語で、自分の考えやクラスメートの考えをお互いに共有することができた。	スマート農業について、時々英語にミスはあるが、自分の考えやクラスメートの考えをお互いに共有することができた。	スマート農業について、自分の考えを伝えたりクラスメートの考えを理解したりすることができなかった。
<b>B. Speak (Presentation)</b>	スマート農業について、適切な英語を使い、1分で発表することができた。	スマート農業について、時々英語にミスはあるが、1分で発表することができた。	スマート農業について、発表することができなかった。
<b>C. Write</b>	適切な英語を使い、スマート農業が日本で一般的になるかどうかについて、90語程度で意見を書くことができた。	時々英語にミスはあるが、スマート農業が日本で一般的になるかどうかについて、90語程度で意見を書くことができた。	スマート農業が日本で一般的になるかどうかについて、意見を書くことができなかった。