



Should Japan Adopt Vertical Farming ?

~Give an example and explain
Singapore~

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Topics

A nighttime photograph of the Singapore skyline. The Merlion statue is prominent in the foreground on the right, illuminated with blue light. The background shows the city lights and the Esplanade - Theatres on the Bay, illuminated with purple and pink lights. The sky is dark with some blue light trails.

① Introduction

② Agriculture in Singapore

③ Agriculture in Japan

④ Should we adopt “Vertical farming”?

Introduction

A nighttime photograph of the Singapore skyline. The Merlion statue is prominent in the foreground on the right, illuminated with blue light. The Esplanade - Theatres on the Bay is visible in the middle ground, lit with pink and purple lights. The background shows the city skyline with numerous lit-up buildings. The word "Introduction" is overlaid in white text on a dark, semi-transparent background.

Vertical Farming

Agricultural Method

Indoors or outdoors

At limited space

Cultivating many vegetables



Example

Spread's facility
in Kameoka, Kyoto Prefecture, Japan



Sky Greens
in Lim Chu Kang Lane, Singapore

Example

The height is 6m

A-shape aluminium frame has 24 shelves

The shelf rotates around frame

Sunlight at the top

Water at the bottom

It uses water and electricity power



Sky Greens
in Lim Chu Kang Lane, Singapore

Example

Spread's facility
in Kameoka, Kyoto Prefecture, Japan



Machine grows and harvest
seedlings automatically

→ Reduce labor costs by 50%

Merits

Farmland
savings

Labor force
saving

Production

Energy saving

Merits

Farmland
savings

Farming in indoors

→ Regardless of climate and land

Farmland is not horizontal but
vertical

→ Farmland is unlimited

Merits

Automatically

→ No manual labor

→ Does not require a lot of workers

Labor force
saving

Merits

Production

Using nutritious soil

Machine control on a 24-hour basis

Farming is in indoor

→ Many production every season.

Merits

Using of natural sunlight
or low electric power
(=only power of a LED bulb)
Used water can be recycled

Energy saving

Merits

Farmland
savings

Labor force
saving

Production

Energy saving

Vertical farming can...

Lack of

culture

Lack of

these problems!

production

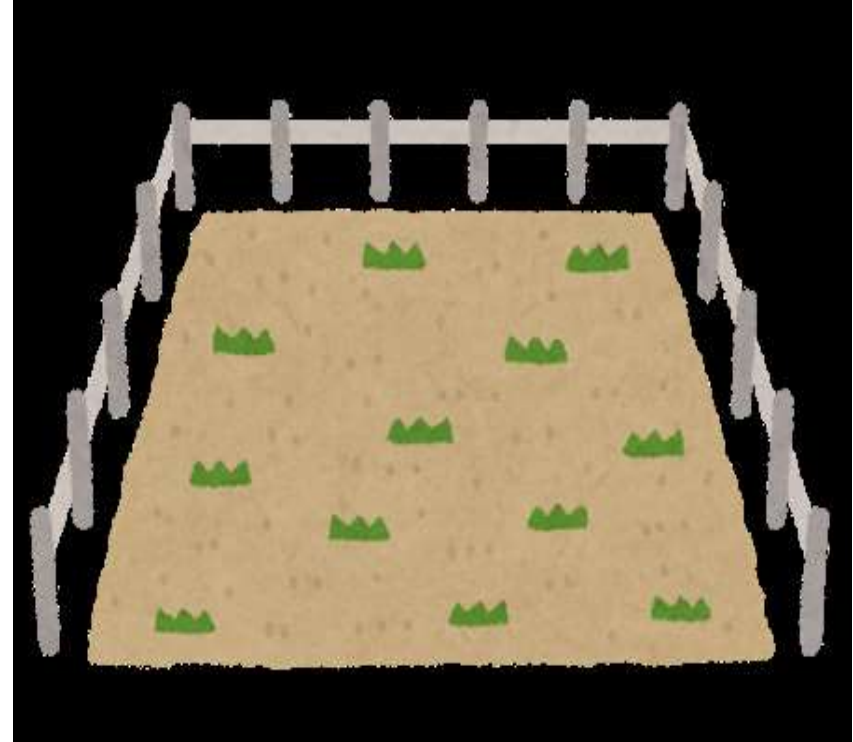
Singaporean Agriculture



Problems of Singaporean Agriculture



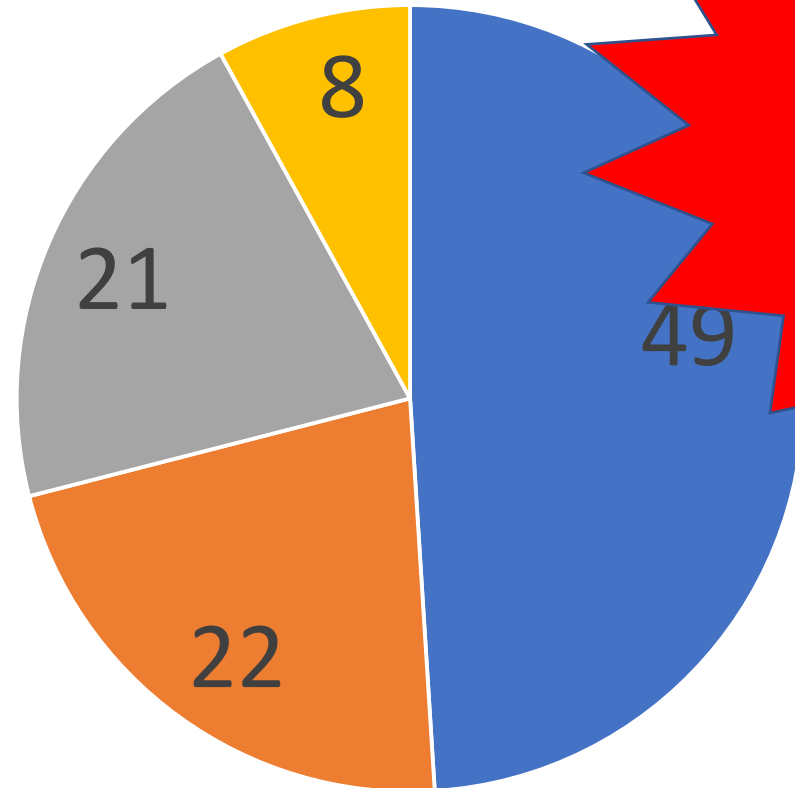
Lack of water



Lack of farmland

Lack of Water for Agriculture

Water Resources(%)

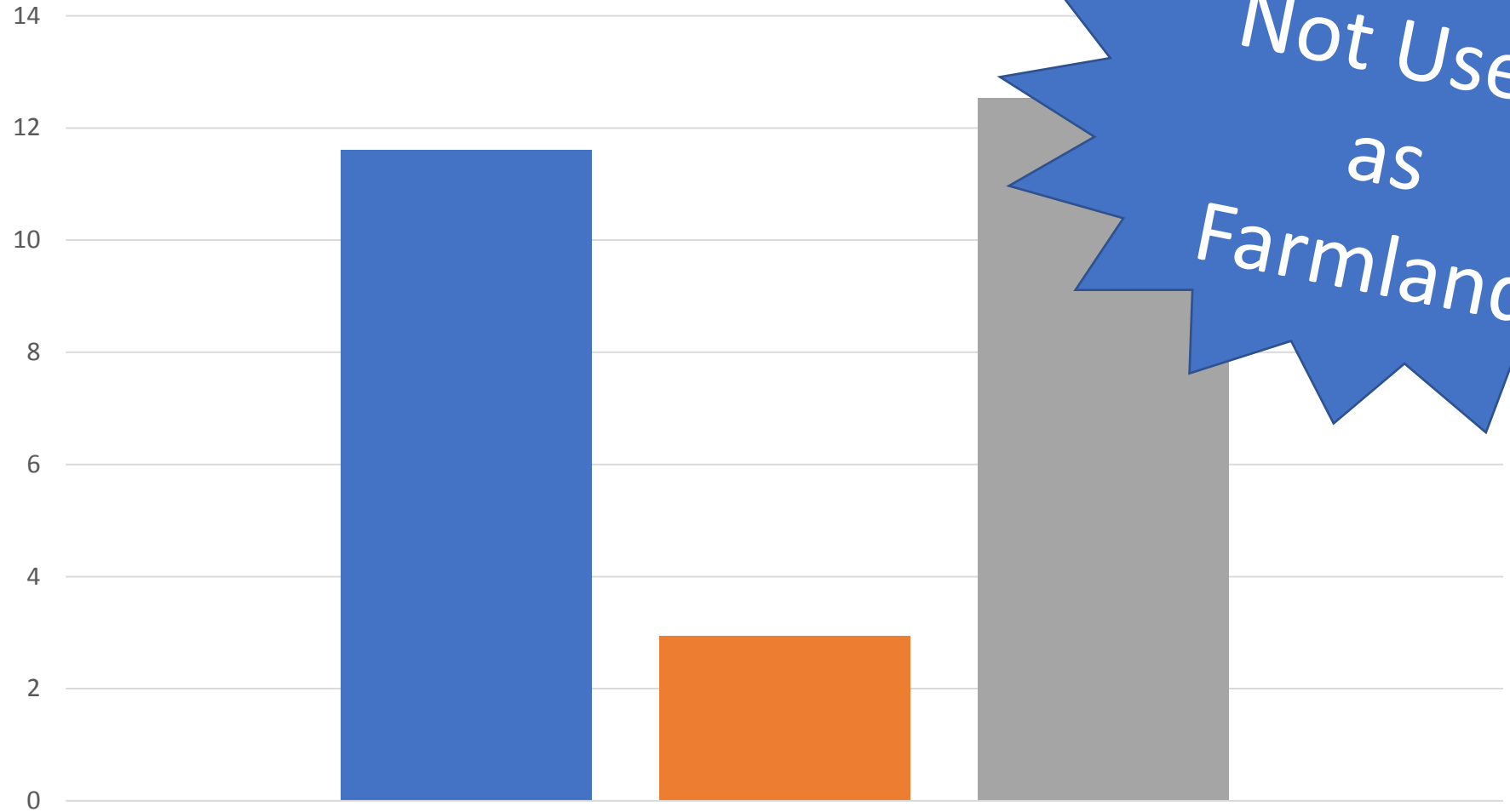


Depends
on
Import!

■ import ■ reservoir ■ NEWwater ■ freshwaterize


Lack of Farmland

The rate of farmland(%)



Not Used
as
Farmland

■ AVERAGE ■ SINGAPORE ■ JAPAN

The background of the slide is a blurred photograph of a tea plantation. In the foreground, a man in a light blue shirt and a woman in a dark shirt are visible, both appearing to be engaged in tea-related activities. The background shows rows of tea bushes stretching into the distance under a bright sky. A large, semi-transparent white circle is overlaid on the right side of the image, containing the title text.

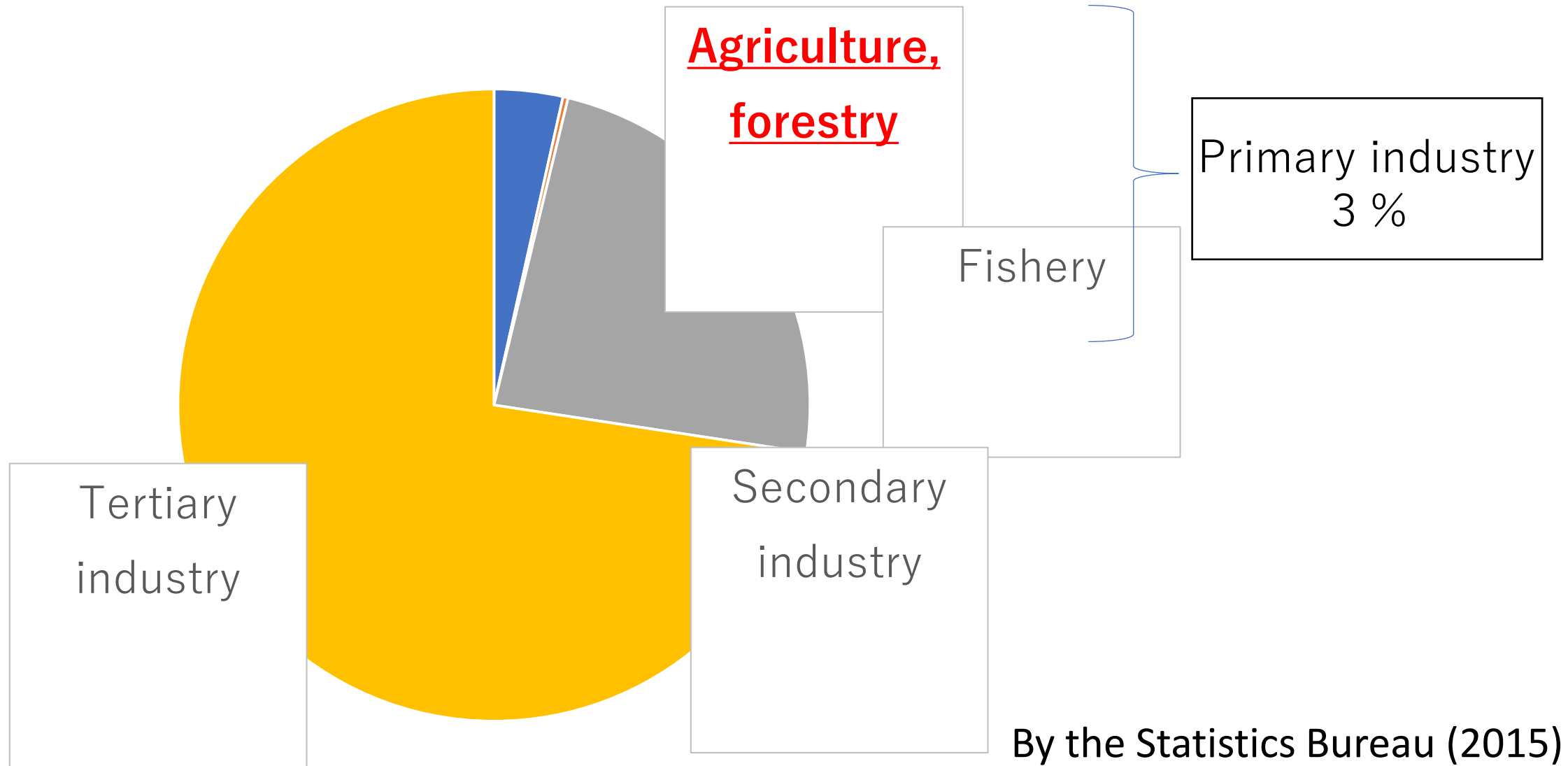
Japanese Agriculture

Problem of Japanese Agriculture



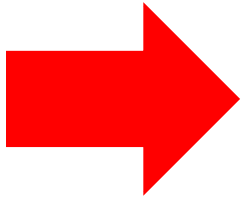
 **Lack of farming population !**

The proportion of agriculture in industry



By the Statistics Bureau (2015)

Why Lack of Population ?

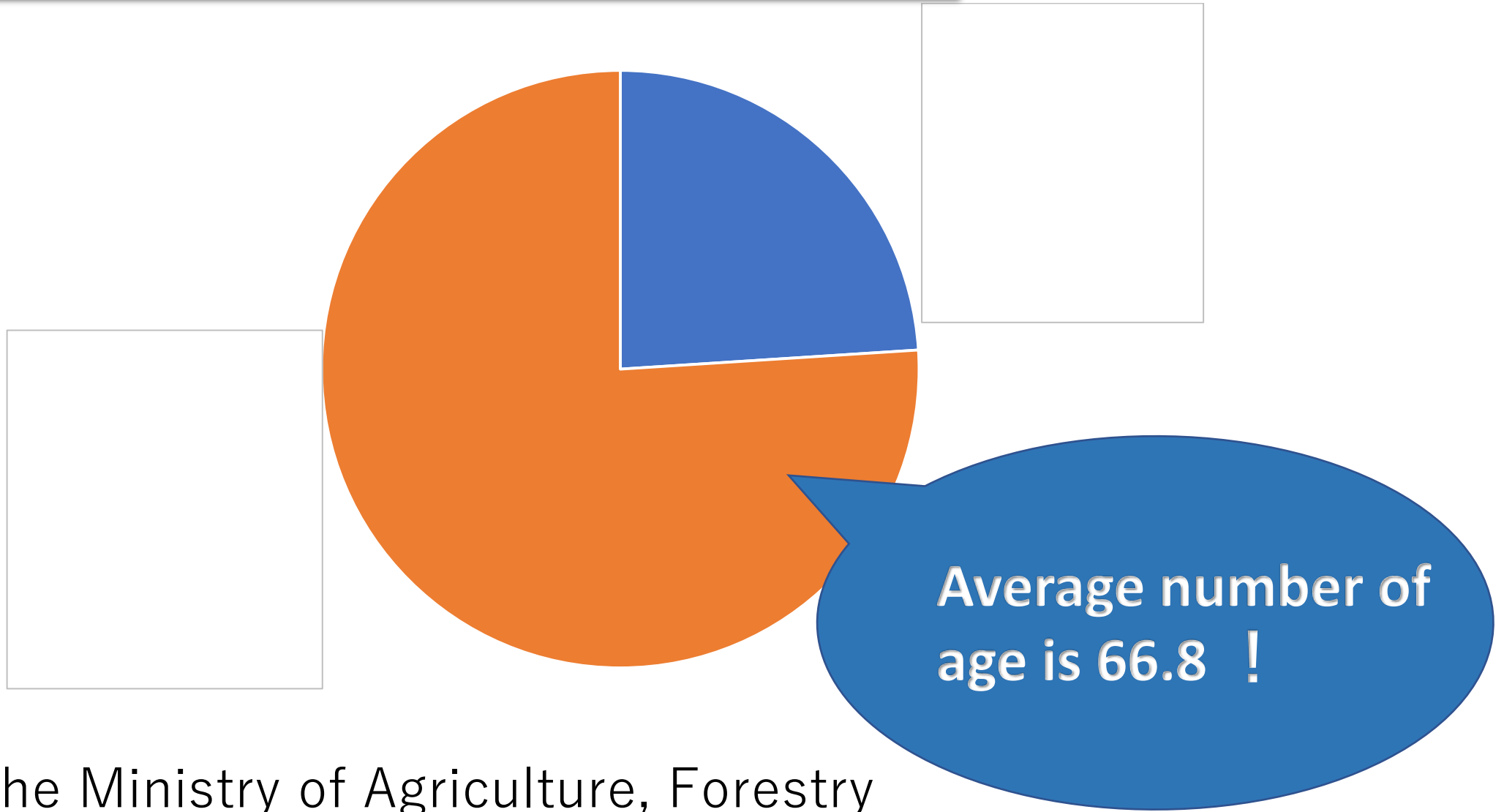


AGING



LACK OF SUCCESSOR

The Problem of Aging in Japan



By the Ministry of Agriculture, Forestry and Fisheries (2019)

Japan's Farming population



By the Statistics Bureau (2015)



**Q. Should Japan adopt
vertical farming ?**

A. YES



In Singapore...

**Lack of water and farmland
→ Vertical farming**

In Japan...

Lack of labor force and aging

→ no need of manual labor

→ Vertical farming

Conclusion

Singapore


Water

Farmland

Japan

Labor force

Aging

A photograph of a modern vertical farming facility. The image shows multiple levels of green plants growing in a controlled environment. The plants are arranged in rows on different levels, and the facility has a clean, industrial look with concrete floors and walls. The text "Japan should adopt 'vertical farming'." is overlaid on the image in a large, white, bold font with a blue shadow. The background is a blurred view of the facility, showing the plants and the structure.

**Japan should adopt
“vertical farming”.**