



Food Security and Food Safety

Sécurité Alimentaire au Japon

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What does food security consist of?

- Food security consists of food **affordability** and **accessibility**. **Economic or physical access** to food is necessary.
- Some people in developing countries
 - (1) **cannot afford** to buy food. A food crisis occurs when food prices soar as in 2008.
 - (2) **have no access** to food due to the lack of transportation or distribution infrastructure, even when food is delivered at ports.
- **Economic growth and/or building infrastructure** is essential for overcoming a food crisis.

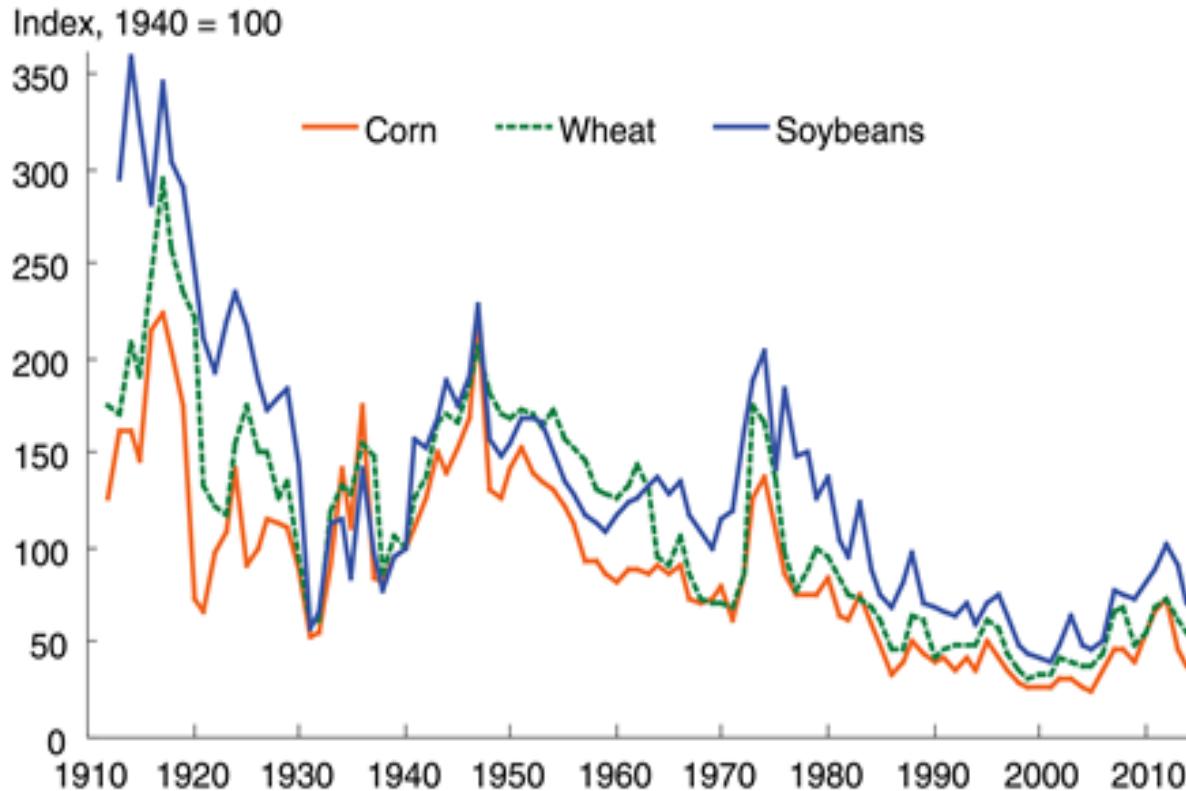
Two scenarios of high food prices

- In the long run, food supply **may be insufficient** for the growing world population. On average, prices might be too high for the poor. **But how true?**
 - **Investment and innovative technologies**
- In the short run, the issue is **volatility or price pike**. Suddenly food prices soar as in 2008, while ample food supply usually keep them low.
 - **Stockpile**

Increasing population will cause food crisis?

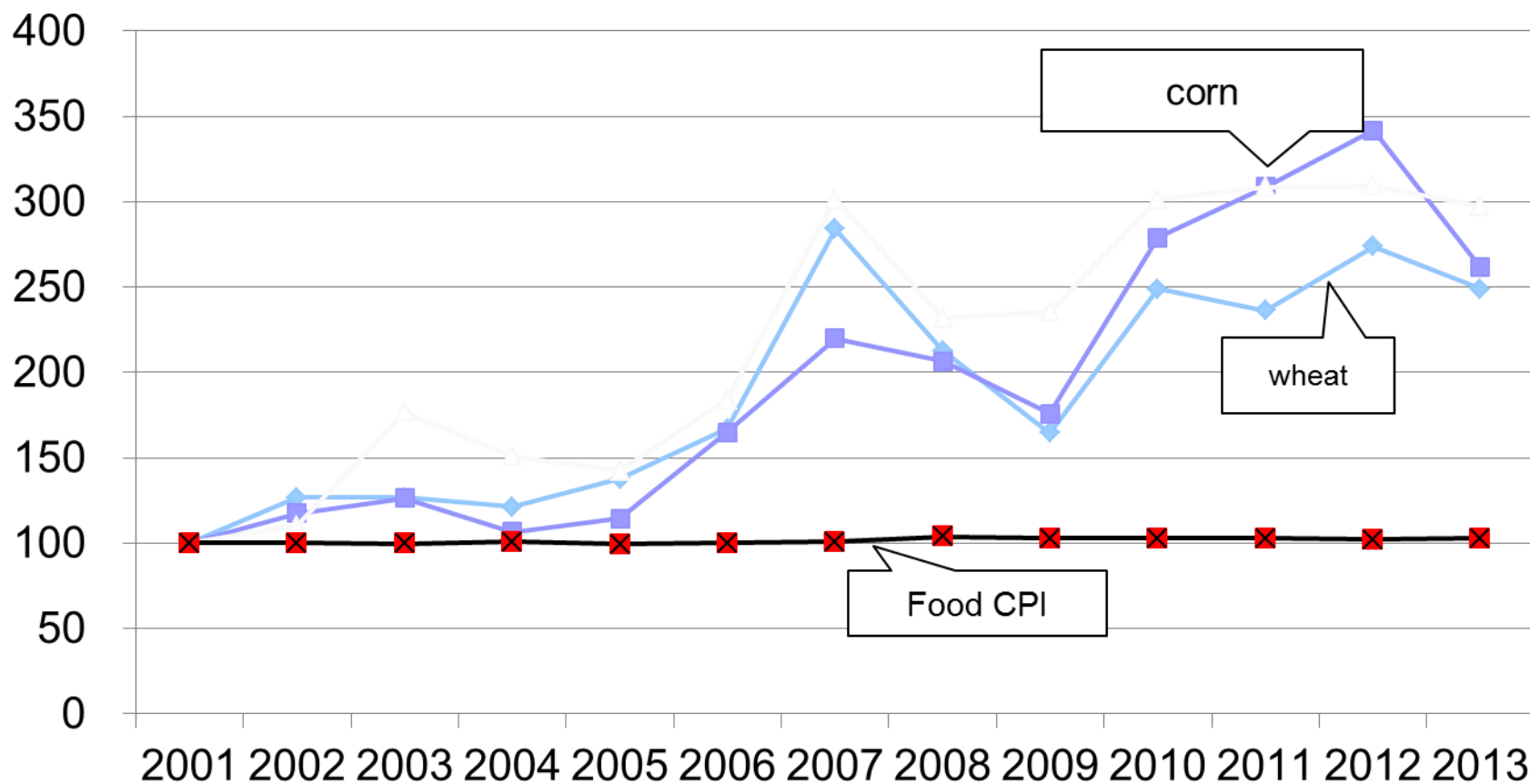
1900年1.7⇒1980年4.5⇒2015年7.3⇒ 2050年9.5 billion people

Inflation-adjusted corn, wheat, and soybean prices, 1912-2014

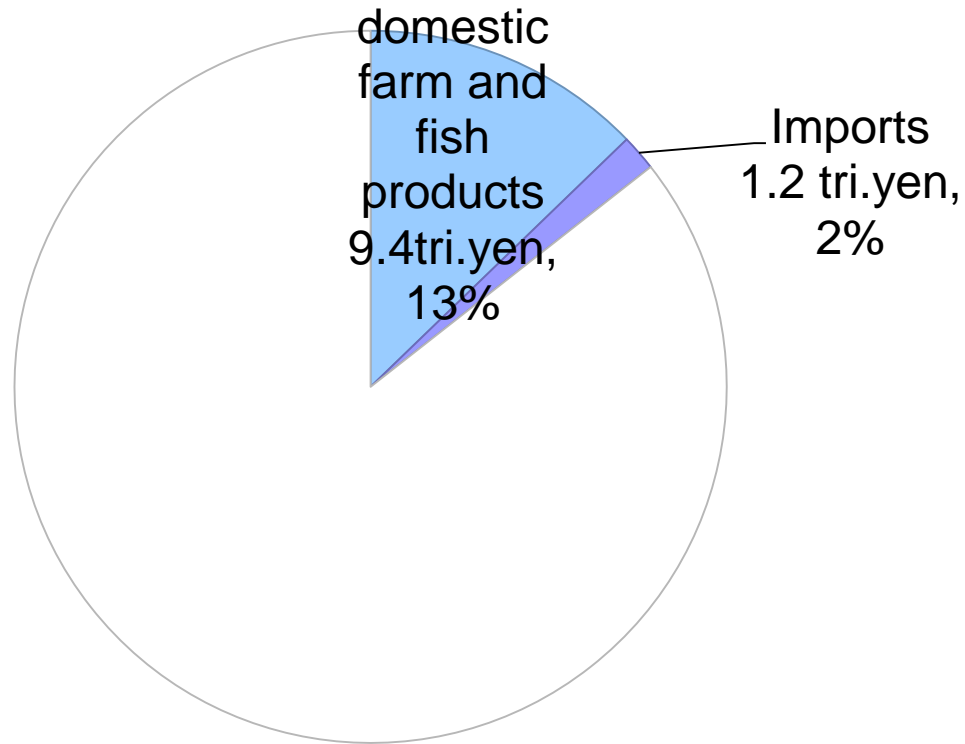


Source: USDA, Economic Research Service calculations using data from USDA, National Agricultural Statistics Service and U.S. Department of Labor, Bureau of Labor Statistics.

Japan in the world food crisis in 2008



Why is Japan safe ?



参考:農林水産省公表資料

Accessibility matters for any importing country

- Japan cannot gain access to food even with plentiful monetary resources when physical disruption of imports such as strikes at the ports of exporting countries or by closure of sea-lanes by military offensives happens. This can happen to any importing country.
- In food crisis a stockpile of food works for the time being. Then domestic supply must be increased. The increase of food production needs agricultural resources for production. But by what means?

the Yellow River ?



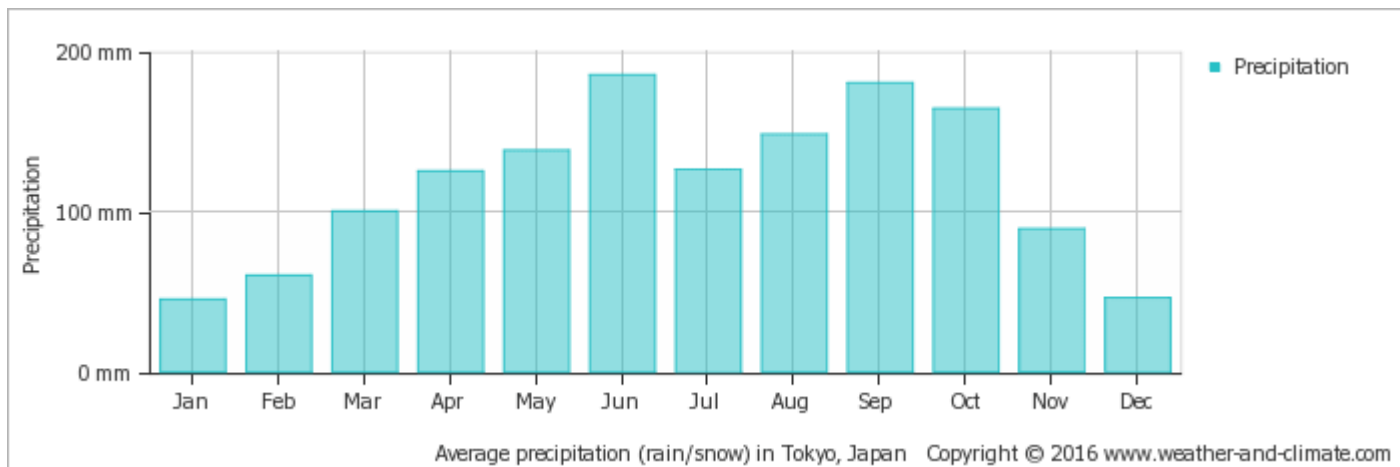
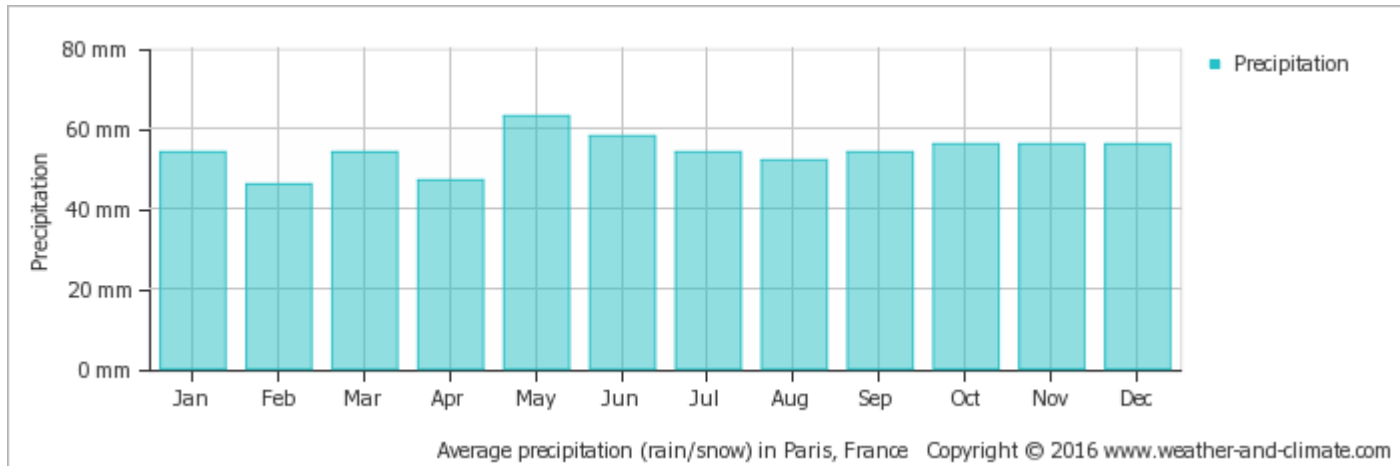
A small gorge or valley?



Snow in *Uzbekistan*?



Rain Precipitation: Paris & Tokyo



Rice vs Wheat, Paddies vs Dry Farming

- **Rice in Asia is more productive than wheat in Europe.** Monsoon Asia covering nothing but 14% of the world land feeds approximately 60 % of the world population.
- **Paddies are immune to water depletion, soil erosion, salinization and replant failure** mostly by the function of water, humidity, forests and shape of paddies.
- Thus rice has been produced every year **more than 4 thousand years without the decrease of yield.** F.H. King, a professor at U of Wisconsin, published “ **Farmers of Forty Centuries**” in 1911.

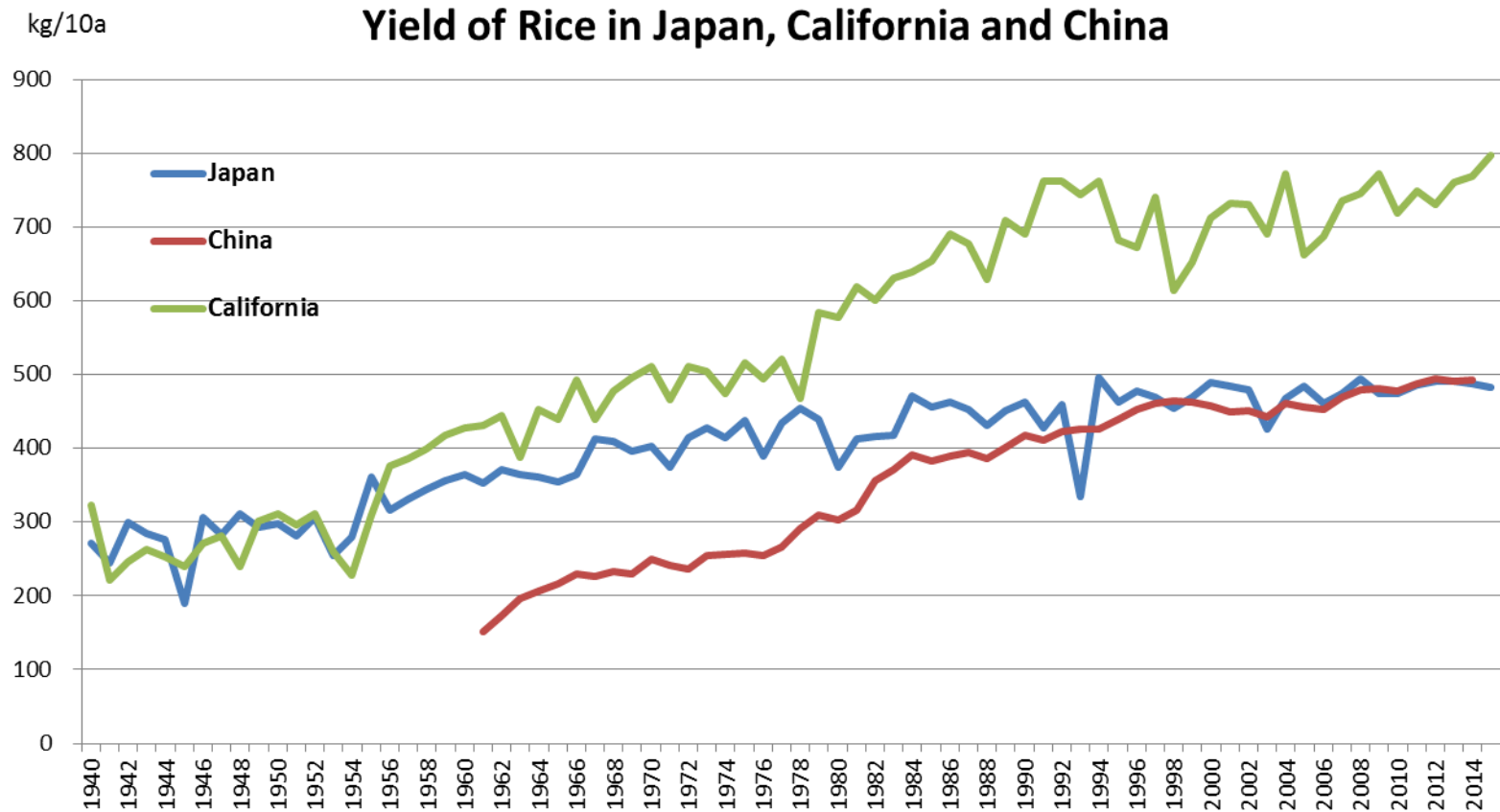
Trade policies make food prices more volatile

- In the period of **food surplus**, a country tries to stop inexpensive imports and isolate its domestic market from the international market by **tariffs** in order to protect agriculture. This diminishes the demand in the international market with the result that **world prices may further fall**.
- In the period of a **food shortage**, on the other hand, a country tries not to export either by **export tax** or **export restriction**. This decreases supply in the international market with the result that **world prices may further rise**.

Japan's farm policy impaired food security

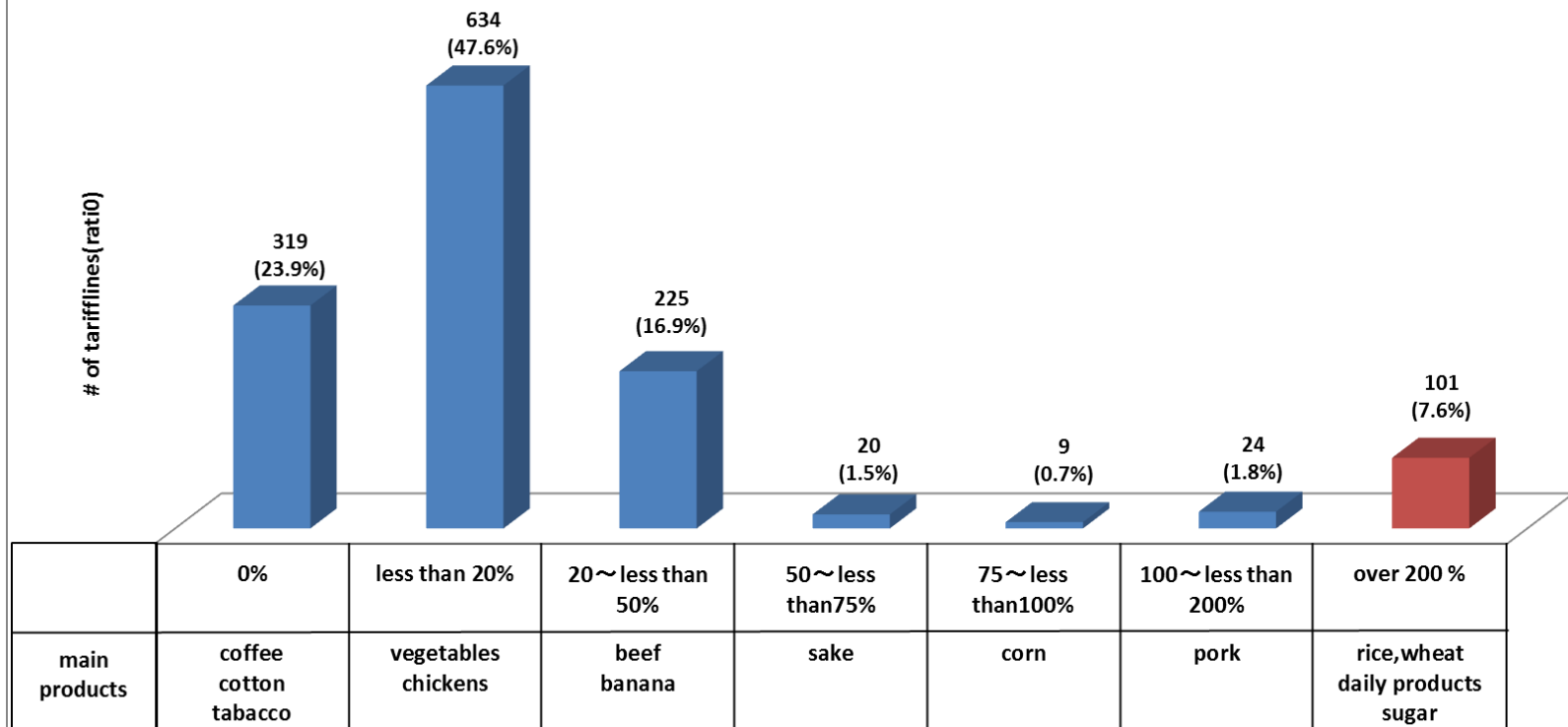
- The government **increased the rice price** for farmers in 1960s. This caused the glut of rice. The government introduced **the acreage reduction program** in 1970 by giving farmers subsidies for reducing rice production. Now **40% of paddies are set-aside**.
- As the demand for rice declines, more and more paddies have been set-aside in order to maintain the price of rice. **Japan has lost 1 million ha. out of 3.5. million ha. of paddies.**

Yield per ha. has been stagnant



Some Japan's tariffs are prohibitively high

Japanese tariffs on agricultural products



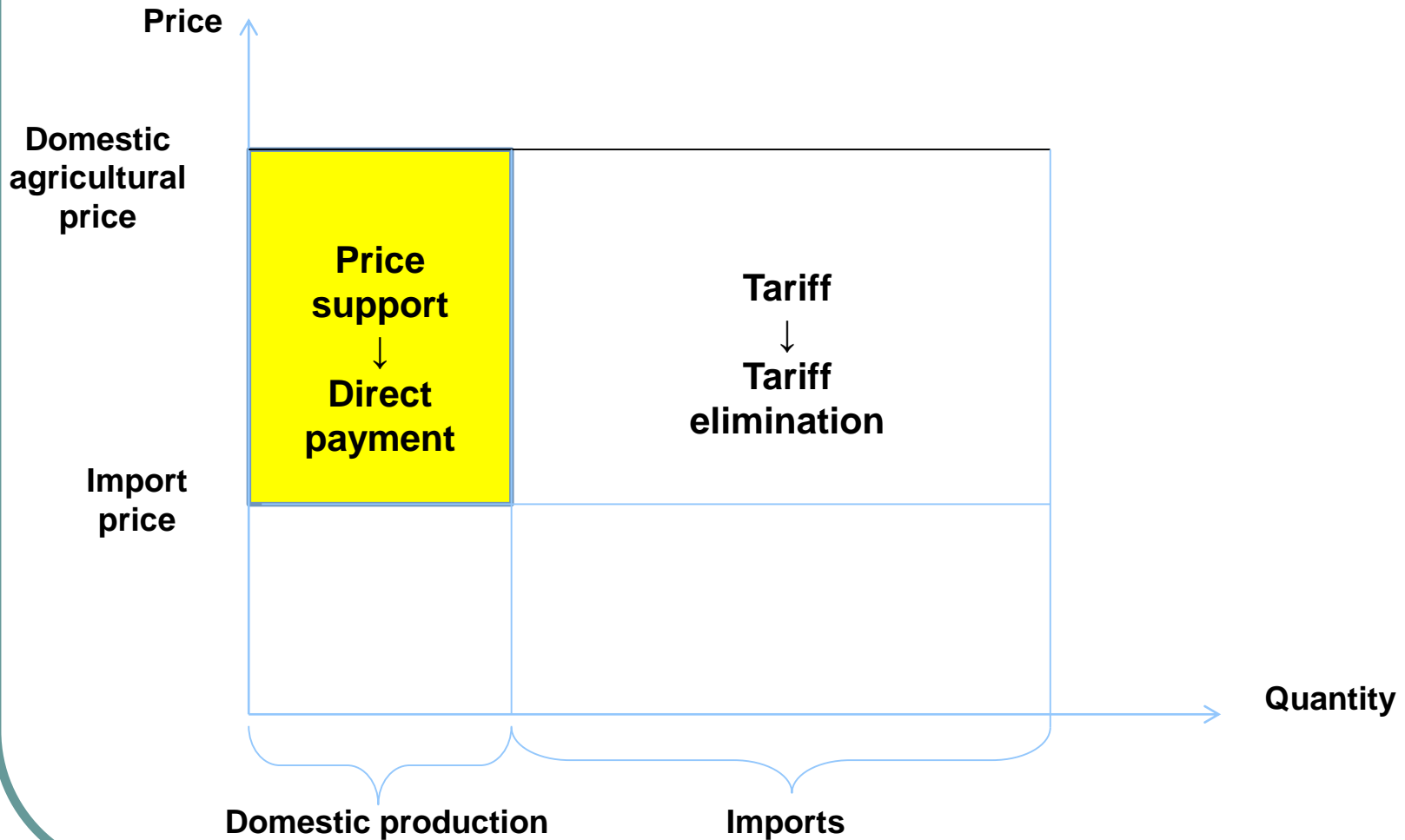
source)MAFF

Comparison of agricultural policies

Country	Japan	US	EU
Decoupled direct payments	No	Yes/No	Yes
Environmental direct payments	Partial	Yes	Yes
Direct payments for less favorable regions	Yes	No	Yes
Production restriction program for price maintenance	Yes	No	No
Tariffs* over 1000%	1 (tubers of konnyaku)	None	None
Tariffs of 500-1000%	2 (rice, peanuts)	None	None
Tariffs 300-500%	2 (butter, pork)	None	None
Tariffs of 200-300%	6 (wheat, barley, skim milk powder, starch, beans and raw milk)	None	None

* Specific tariffs are applied to tariffed products in Japan. Here, these specific tariffs are estimated as their equivalents of ad valorem tariff rates, taking into account international prices.

Change from Price Support to Direct Payment eliminates Consumer Burden.



Price Support backed by Tariffs vs. Direct Payments

- Price support higher than an international price decreases demand for its own agricultural industry. Thus, Japan's farmland indispensable for food security severely declined from 6.1 million hectares to 4.5 million hectares from 1960 to 2016.
- **Direct payments to farmers do not distort the market.** They will directly address and target **the real needs, such as the farmer's income and food security.**

Japanese agriculture needs Free Trade

- The Japanese population is aging and decreasing. The domestic market for Japanese agriculture protected by high tariffs will be shrinking.
- In order to survive, Japanese agriculture has to **create overseas market. Free trade agreements** which eliminate tariffs on Japanese farm products **are indispensable for Japanese agriculture.**

Free Trade is a basis for Food Security

- In a nutshell, **the price support backed by tariffs has made the Japanese more food insecure.**
- In normal times, Japan imports wheat and beef and exports rice under free trade. In case of a food crisis, it **will stop exporting rice and rather start consuming.** It works as **a stockpile without public expenditures.**
- Exporting rice in normal times under free trade **maintains agricultural resources, paddies, in case of need.**
- **Free trade is a basis of food security.**

The structure of WTO-SPS agreement: Harmonization or Downward Harmonization?

individual countries can restrict food import if they have scientific evidence

international standards

level of protection

risk assessment
by the international organization

international standards
(1.0ppm)

standards of individual countries

higher level of protection

risk assessment
by individual countries

higher standards than international
standards (0.1ppm)

Countries may Deviate from International Standards If

- 1) there is **scientific justification** (for instance, international standards are found to lack scientific evidence)
- 2) a country implements measures that may result in **a higher level of protection** than would have been achieved by measures based on the relevant international standards
- 3) **scientific uncertainty** surrounding risk-assessments justifies implementing extended measures, or **the level of intake of foods in question differs** among countries.

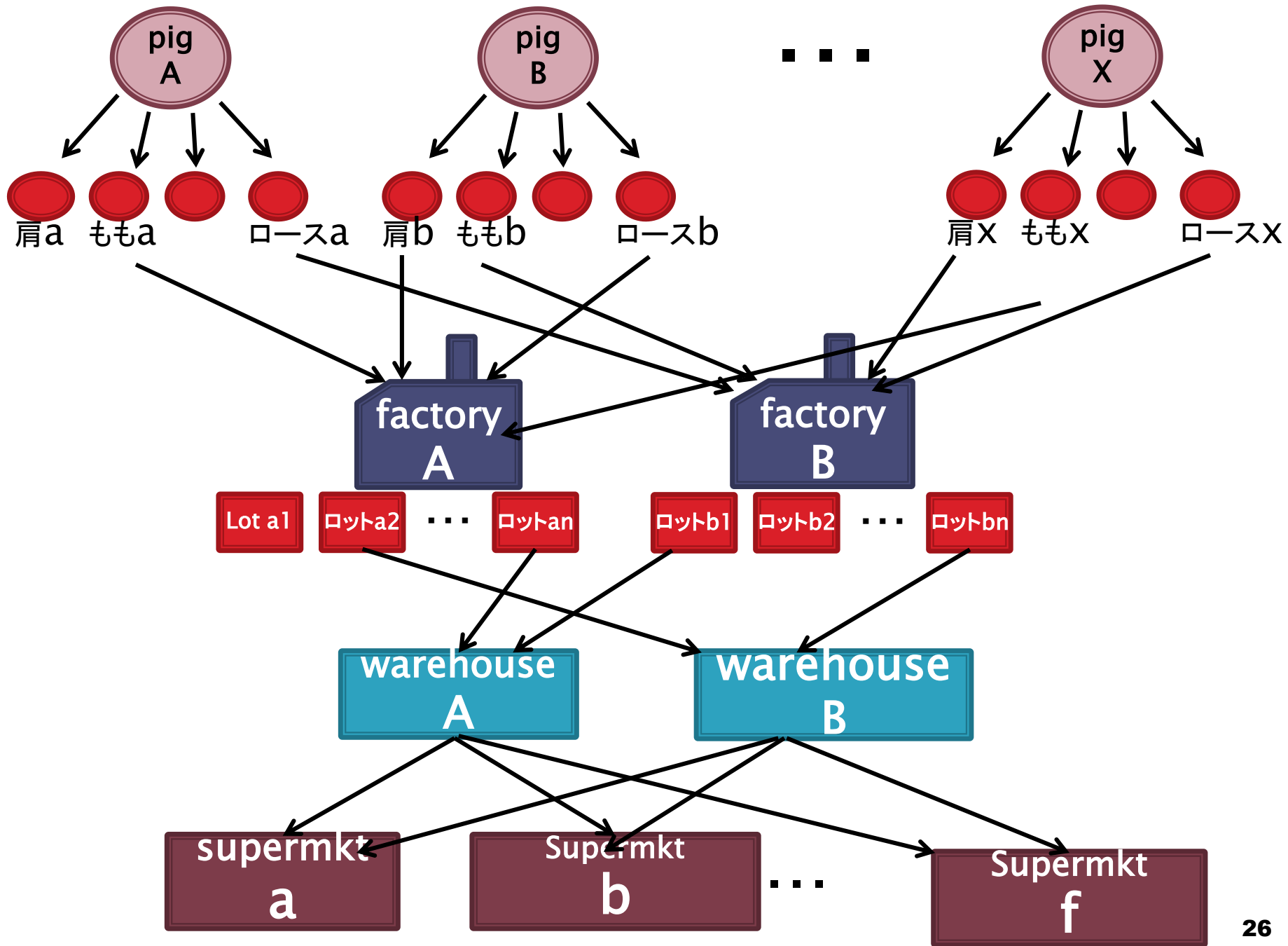
Food Safety and Traceability

- It is **hard to find out or specify who or what causes the problem** when many farmers, workers and firms are involved in a food chain. People feel the necessity of **traceability**. But it is **costly**.
- Things are made worse when **international trade is involved** in a food chain.

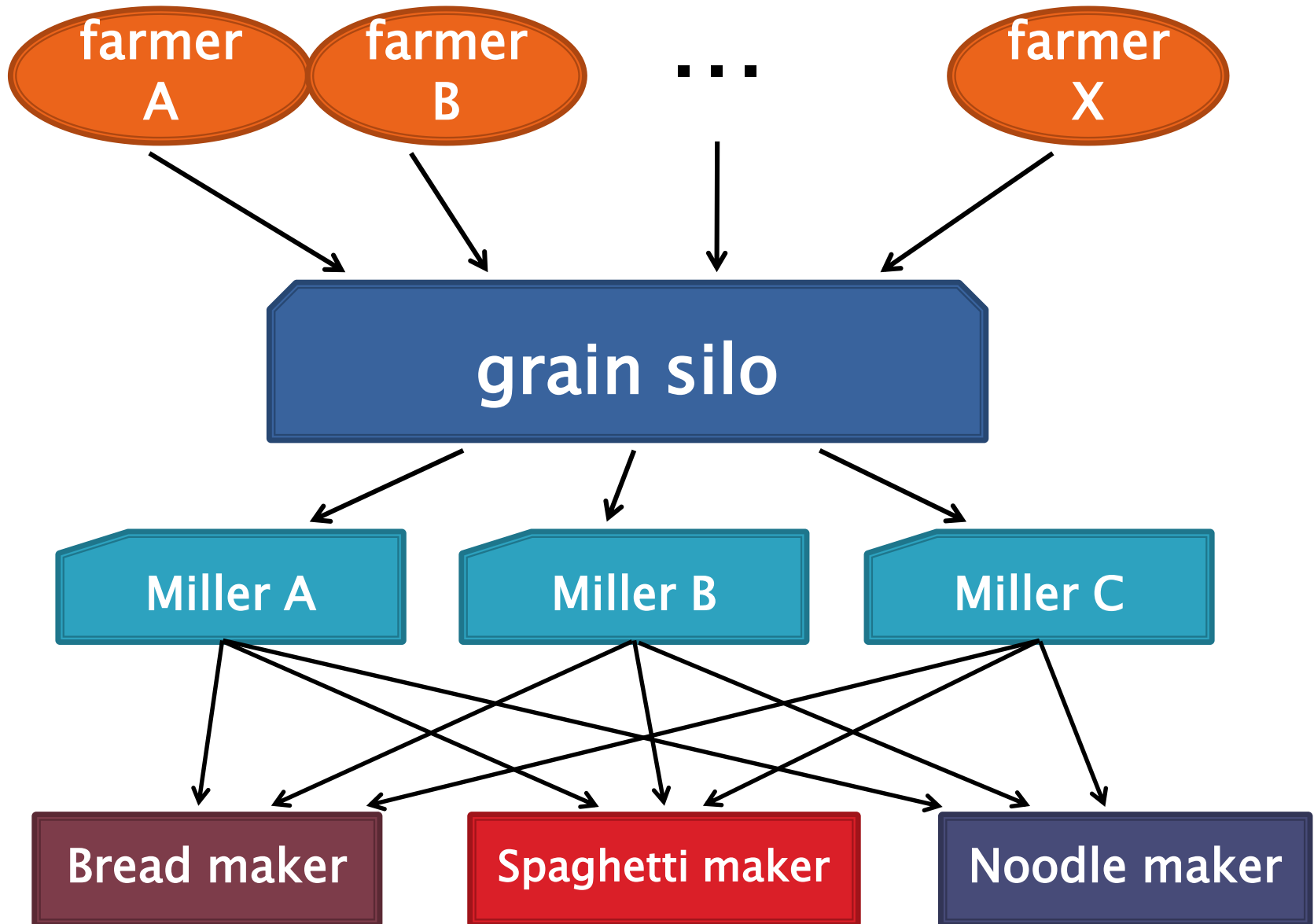
Blockchain helps traceability?

1. A decentralized, distributed digital ledger or data store
2. Records transactions in chronological order across a network of computers
3. Transactions can be added but cannot be edited or deleted retroactively without the alteration of the subsequent blocks and the collusion of the network.

It sounds good, but



wheat





Merci beaucoup !