

Food Safety and Trade

To Feel Safe or To Be safe,
That is the Question

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People Feel Unsafe for Food

- ▶ **False labeling** by agri-business (mostly not the case of food safety but that of product selection)
- ▶ A lot of **food safety issues**
 - GMOs ▪ BSE(mad cow disease)
 - residual agricultural chemicals in vegetables, poisoned pan-fried gyoza and dairy products imported from China
 - food poisoning caused by raw meat and milk
 - highly pathogenic avian influenza

Regulations on Food label

TBT agreement
【product selection】

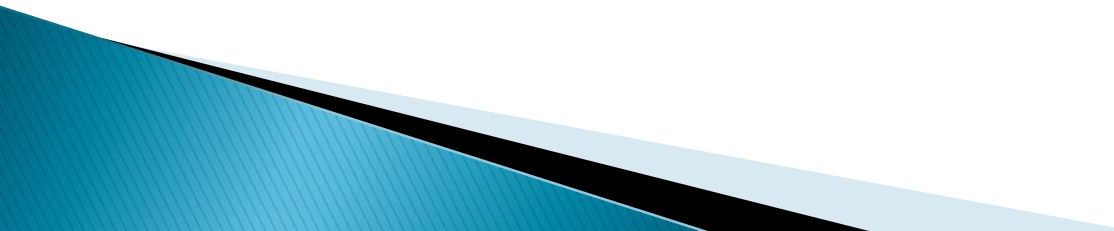
- raw material
- origin of products
etc.

- best if eaten by this data
- way of conservation
- GMO
- the name of a manufacturer
etc.

SPS agreement
【food safety】

- allergy
- food additives
etc.

To Feel Safe or To Be Safe

- ▶ How do you think about apples which **your neighbors** produce? How about those from **China** or the US?
 - ▶ Do you feel safe for them?
 - ▶ Are they really safe?
- 

What makes Food Safety matter?(1)

- ▶ **Two major characteristics** of the food supply chain in the modern age. There are **advantages and disadvantages**.
- ▶ **1. Scientific and technological advances** have brought significant changes or improvements to farming, food processing, distribution in the food supply chain. This enriches our lives.
- ▶ On the other hand, **pesticides, food additives and GMO** have come into wide use. **MBM** (Meat and Bone Meal) was fed to cattle.

What makes Food Safety matter?(2)

- ▶ 2. We benefit from **globalization and trade expansion**. Now we can enjoy food from all over the world.
- ▶ On the other hand, globalization or trade causes problems. Some **pests, diseases or harmful animals and plants** have been **transmitted from one country to another**. BSE might not have occurred in Japan had it not been for international trade.

What makes Food Safety matter?(3)

- ▶ 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. This is especially true to Japan because **Japan relies on a lot of imported food**.

What makes matters much worse?

- ▶ 3 kinds of food in the light of risk or safety
 - 1) we easily detect poisonous food if it is rotten, changes colors or smells bad(search)
 - 2) we can know its characteristics after we buy it:milk tastes bad. (experience)
 - 3) even after we buy it, **we have no means to know its ingredients such as vitamins and food additives, whether or not it is GMO, whether it is made in Japan or China, or how it is contaminated by chemical residues.** (credence)
- ▶ food in the second and the third categories has increased.

Asymmetry of Information

- ▶ In most cases of credence food, **consumers cannot know the characteristics or risks of food but producers or distributors know them.** We have no other ways than to trust their method of production or their labeling.(asymmetric imperfect information)
- ▶ Sometimes even producers or distributors do not know whether food is safe or not if it is contaminated by microorganism in the process of processing or distribution or if it is poisoned by a worker in a factory.(symmetric imperfect information)

Food Safety and Trade(1)

- ▶ Every country has **the sovereign right** to protect the lives, safety and health of its people. **Sanitary and phytosanitary (SPS) measures** introduced to prevent the entry of harmful pests and diseases via the import of foods, animals and plants are a justifiable means for the purpose.
- ▶ Consumers express **strong concern** that food safety could be jeopardized **if appropriate SPS measures become difficult to implement under globalization.**

Food Safety and Trade(2)

- ▶ SPS measures are used to protect domestic agriculture and food industries because traditional trade measures such as tariffs are not as readily available or effective as they used to be.
- ▶ To promote trade liberalization, SPS measures used as disguised trade restrictions should be restricted or eliminated. However, it is not easy to distinguish bona fide SPS measures for the protection of life, safety and health from those actually intended to restrict trade.

Food Safety and Trade(3)

WTO is coming to dinner?

- ▶ The WTO's SPS agreement sets out that measures without **scientific evidence** are not allowed. A country must show scientific evidence that a certain risk to human, animal or plant life or health does exist *and* the risk can be alleviated by its measure.
- ▶ But **importing countries stand to bear the costs** incurred by diseases entering via food and agricultural imports, and the resulting health damage **if the scientific evidence turns out to have been wrong**. Only trade interests are protected in WTO.

Precautionary Principle

- ▶ Scientific views and opinions are diverse and subject to periodic change. It is not uncommon that a new risk is found in food that was previously judged to be safe and vice versa.
- ▶ Until 1996 when the British government announced the possible link between BSE and human vCJD, it had been denied scientifically.

Precautionary Principle

- ▶ The idea of the “precautionary principle” has been developed. We should take protective action before there is complete scientific proof of a risk; that is, action should not be delayed simply because full scientific information is lacking.
- ▶ A provision (Article 5.7) reflects this principle in the SPS Agreement though some argue that it does not suffice. 1.in cases where relevant scientific evidence is insufficient, 2.provisionally adopt measures on the basis of available pertinent information, 3.seek to obtain additional information, 4.review the measure within a reasonable period of time

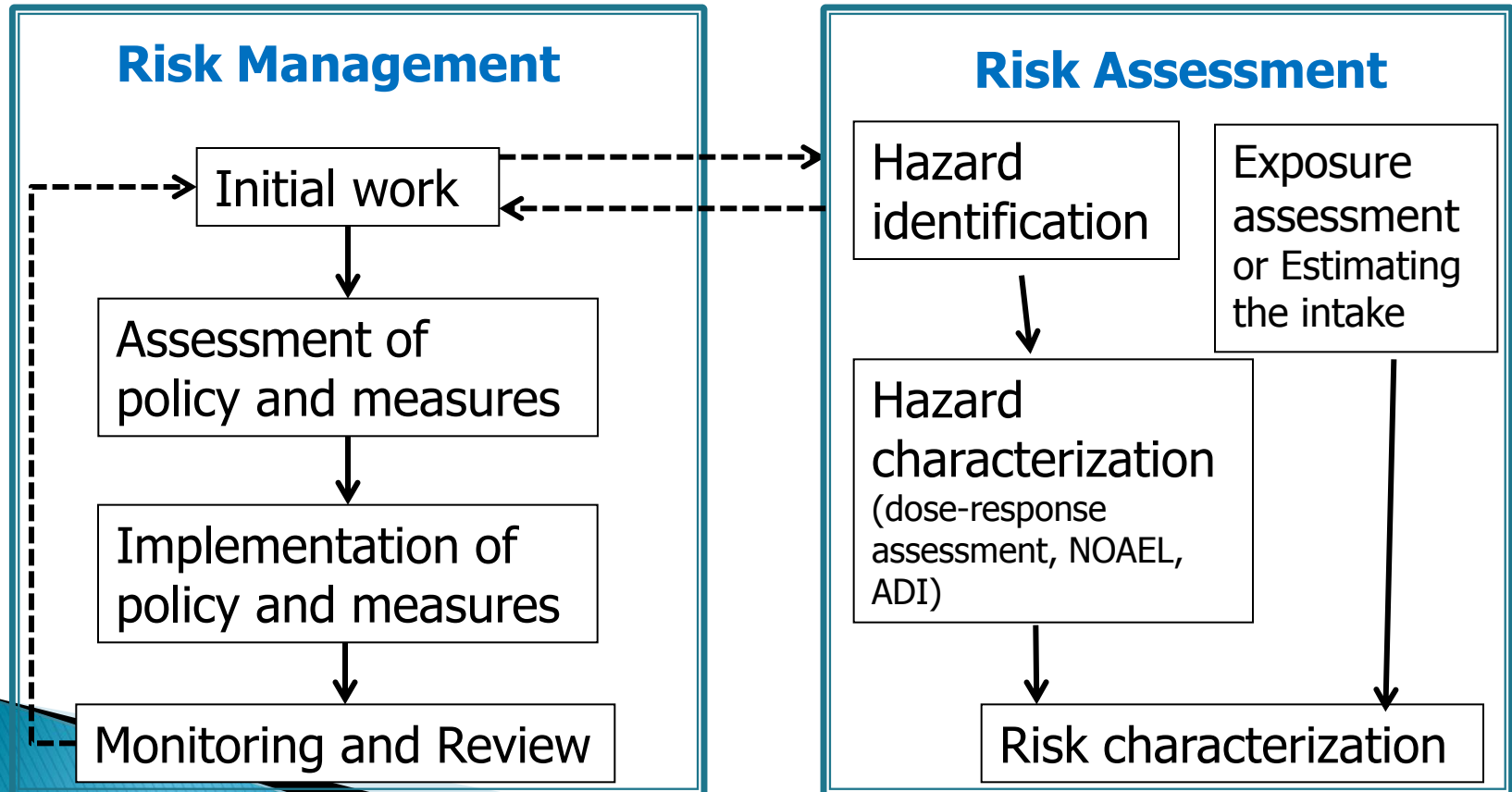
What is risk?

- ▶ Risk depends on both the **damage** (hazard) and its **probability**.
- ▶ If a serious damage may take place but is highly unlikely, it is not risky.
- ▶ However, **mass media** is willing to report the unlikely damage or event. They do not report its likelihood very much. Then a case of lower risk (serious but least likely damage) is more often reported than a case of higher risk(not serious but highly likely damage). People tend to form their ideas or take actions based on the exaggerated story.
The case of BSE in Japan is a typical example.

Risk Analysis

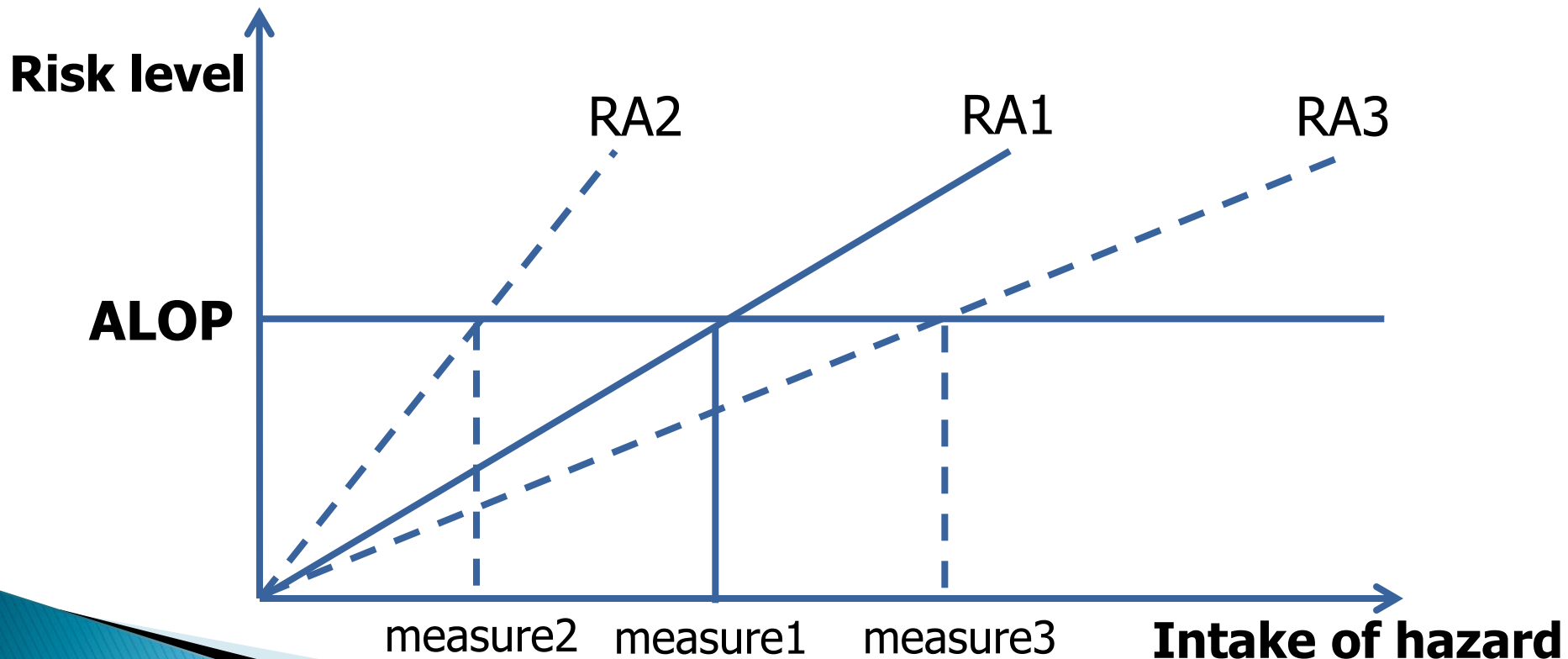
Functional separation and Interaction

Risk Communication



the structure of SPS agreement

The relationship between **ALOP** (the appropriate level of protection) or the acceptable level of risk, as an objective, **risk assessment**, and an **SPS measure**, as an instrument

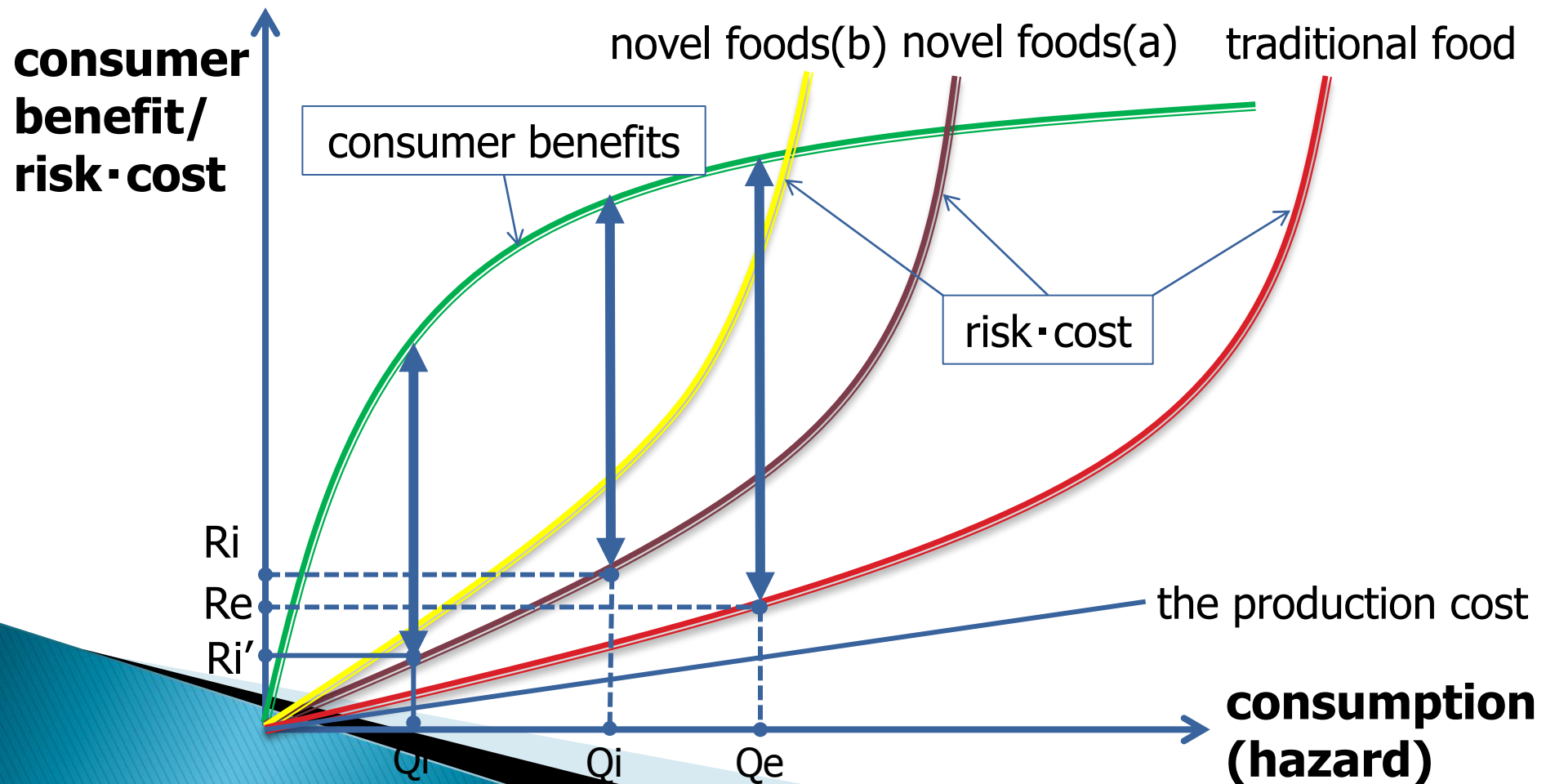


“zero risk” or “absolute safety”

- ▶ There does not exist “zero risk” or “absolute safety”.
- ▶ Safety means that risk (a car accident) is small compared with benefits (drive a car).
- ▶ We should consider benefits in order to determine ALOP ⇒ cost–benefit analysis is necessary in the light of economics.
- ▶ In cost–benefit analysis, ALOP and SPS measures are determined at the same time as the following figures depict.

ALOP(R) and measures(Q) depends on benefits and costs. Theoretically they differs from country to country and from food to food.

cost-benefit analysis of food safety

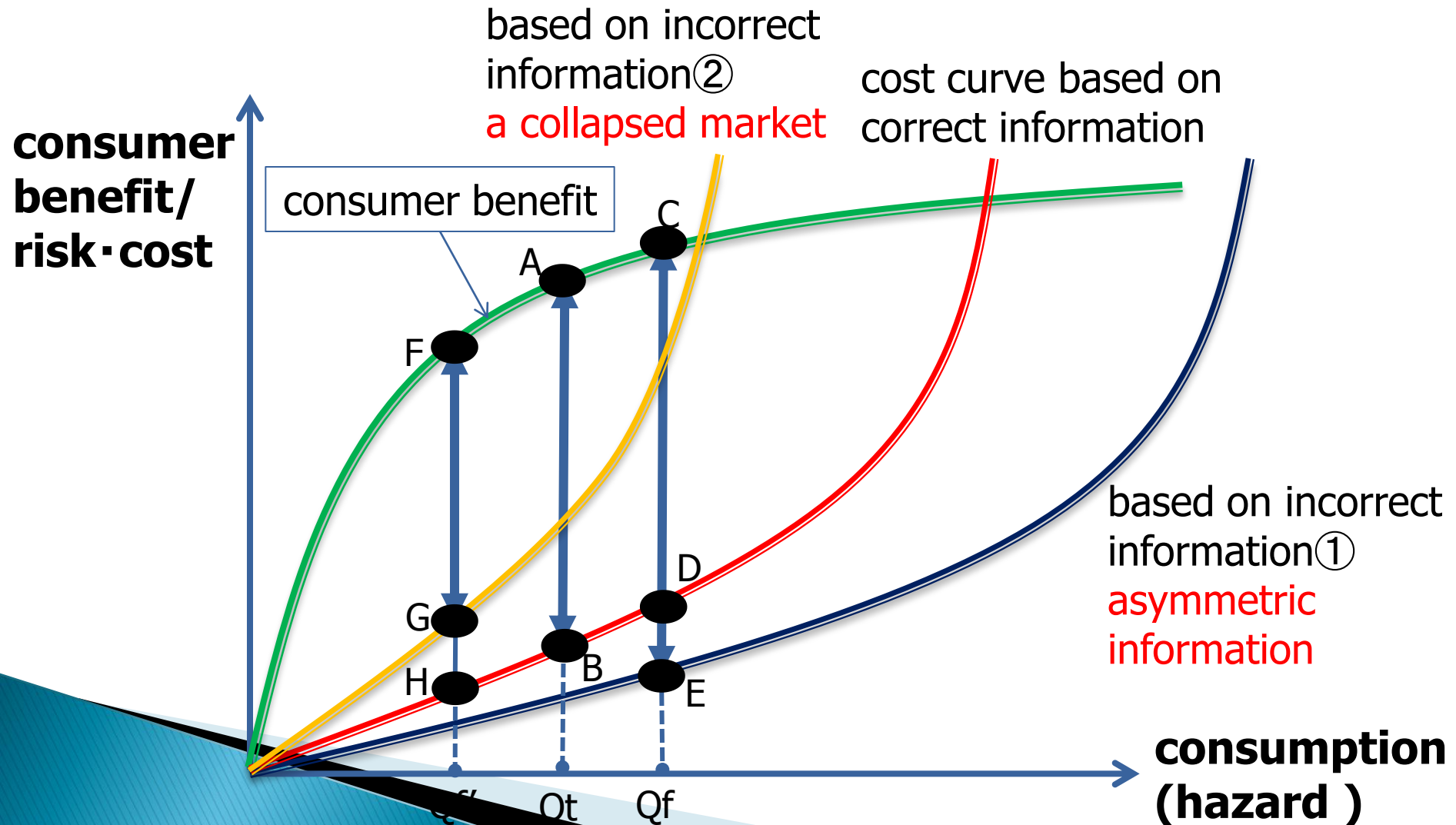


ALOP for different risks may differ for the same product in different conditions

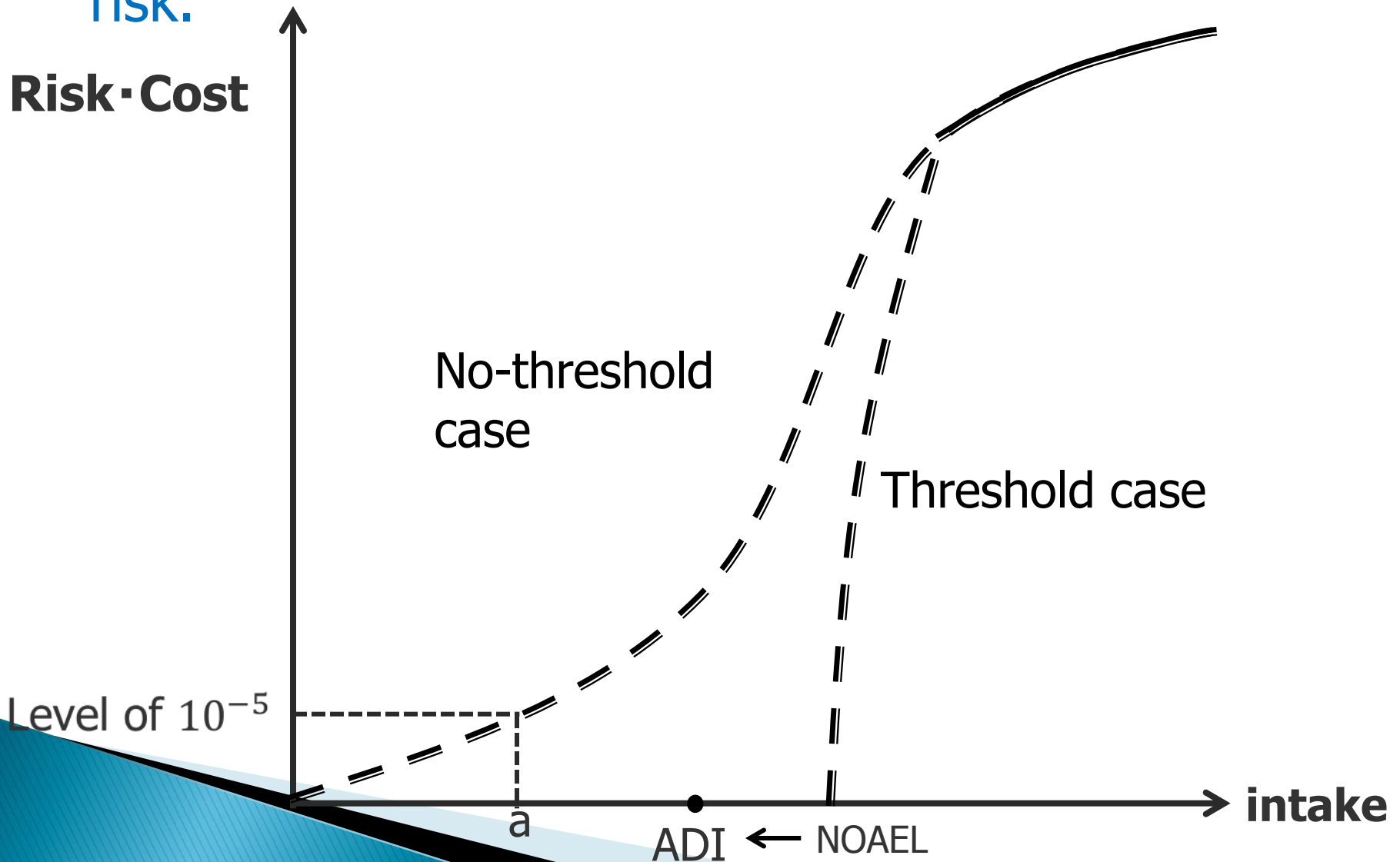
- ▶ In the whole world, about 200 people suffered from vCJD, while 1 million cows were infected. In Japan, **nobody died of vCJD though a vet and 4 farmers lost their lives due to the turmoil**. People was panicked at BSE and demanded zero risk. On the other hand, **yukhoe** (Korean dish of seasoned raw beef topped with an egg yolk) killed 5 people in 2011. But someone said “it is a shame that I cannot eat yukhoe”.

We may not know the costs

case of a collapsed market and asymmetric information



In risk analysis, however, **the threshold model** is usually assumed based on the idea of **zero risk**.



how the measures are determined

Animal Test

the upper limit or threshold of a certain pesticide (NOAEL) over which it harms animals is determined.

Multiply by safety factor

that limit is multiplied by a safety factor (usually one-hundredth) to set an acceptable daily intake (**ADI**) for human beings.

Allocate ADI

ADI is **allocated** to each of the foodstuffs on the basis of the amount of such foodstuffs ingested by people in the country, and thus the standard value of a certain pesticide in each of the foodstuffs is calculated.

Risk communication among stakeholders is insufficient

- ▶ 1) **difficult to explain scientific evidence to consumers**—a scientist says “it is safe to consume more than the limit determined by the government,” taking into account safety factor. Then how safe?
- ▶ 2) **no comparison between different risks**
water in a pet bottle may contain more carcinogen, arsenic, than tap-water contaminated by radioactive cesium at the time of the Fukushima nuclear accident.
- ▶ 3) **consumers’ excessive reaction to the incident**
Consumers are more exposed to mass media than to scientists.

the most stringent, unnecessary and costly measure is taken.

In the case of BSE in Japan,

1. testing all cattle regardless of ages was introduced and maintained for a long time(only 36 infected cows were found).
2. All of the domestically produced beef was bought by the government and incinerated at the outbreak of BSE.

Approximately, 3 billion euro were spent from 2001 to 2003 for those measures.

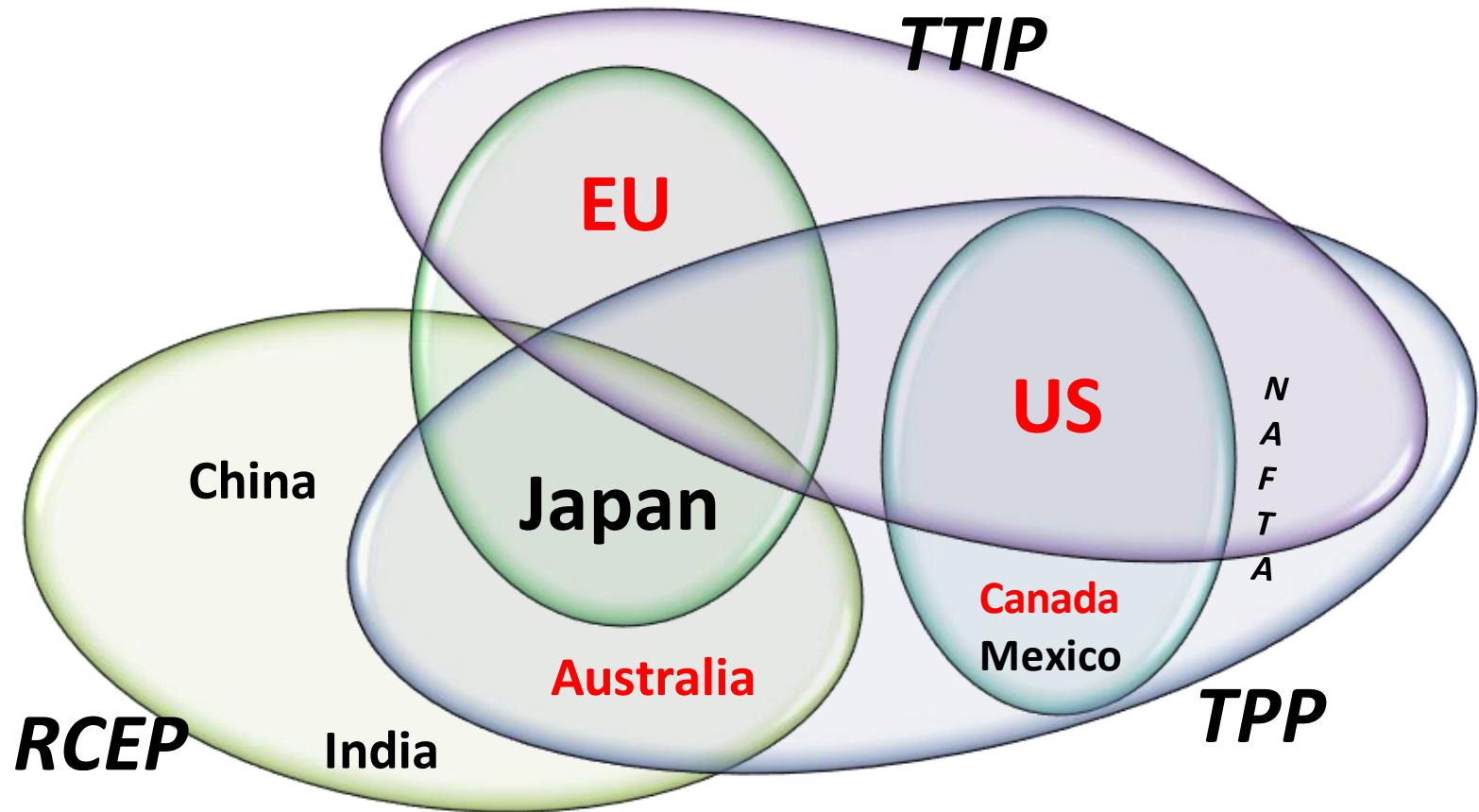
What risk communication brings

- ▶ Consumers' excessive reactions or anxieties to unknown events or products will be mitigated. They could know **the cost or risk based on correct information** (the cost curve will shift downward). This may attain the optimal consumption of the goods.
- ▶ We can't make cost-benefit analysis without knowing consumers' benefits or psychological risk/costs. In case of BSE people demand zero risk, while they accept some risk in yukhoe.

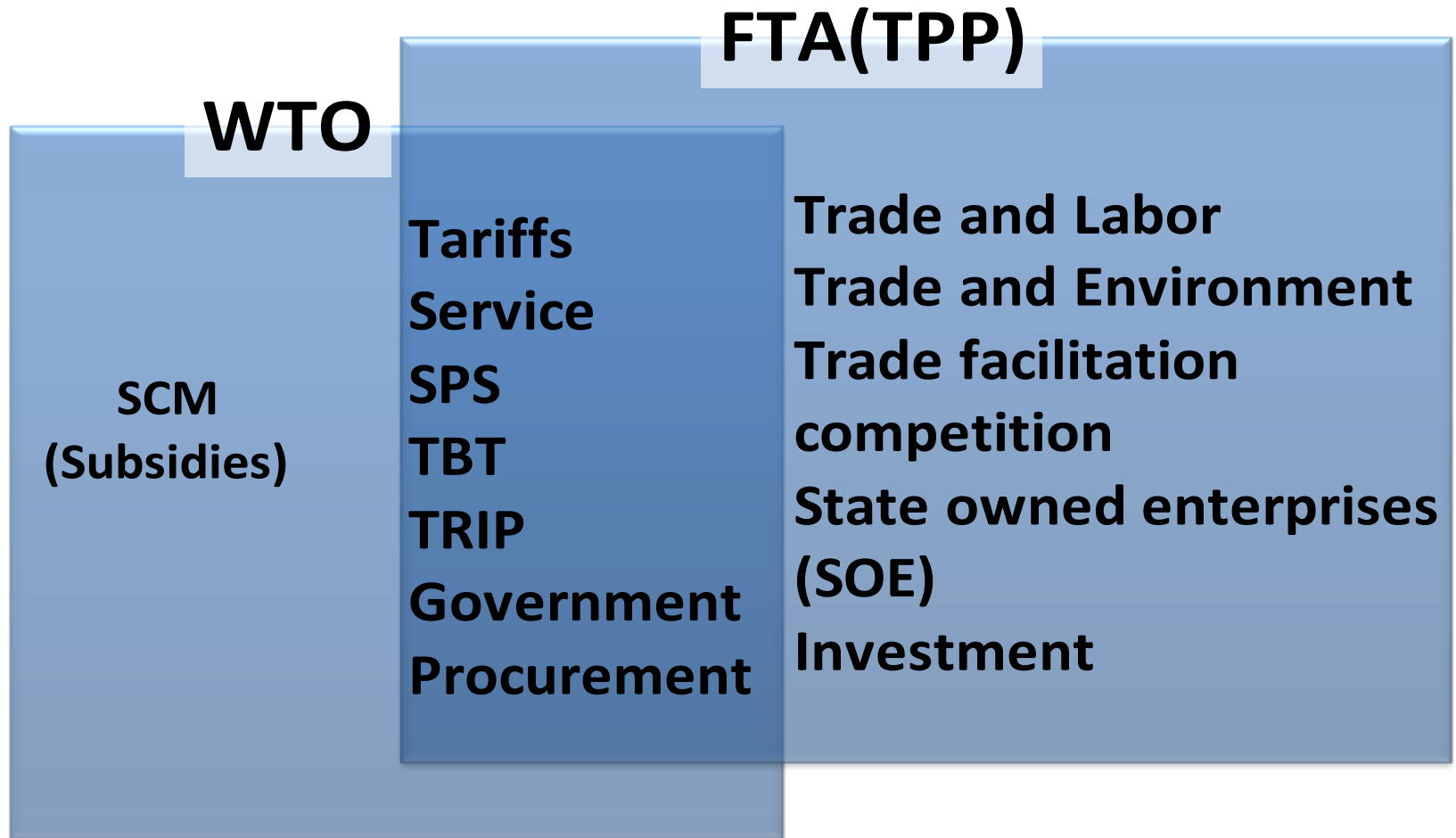
Regulation is not all bad

- ▶ Correct labeling backed by public certification, which people trust, may improve the case of asymmetric imperfect information.
- ▶ Rigorous legal or social punishment of any infringement of a regulation lets a food company refrain from cheating the public.
- ▶ Regulation works as public goods.

Mega-FTAs



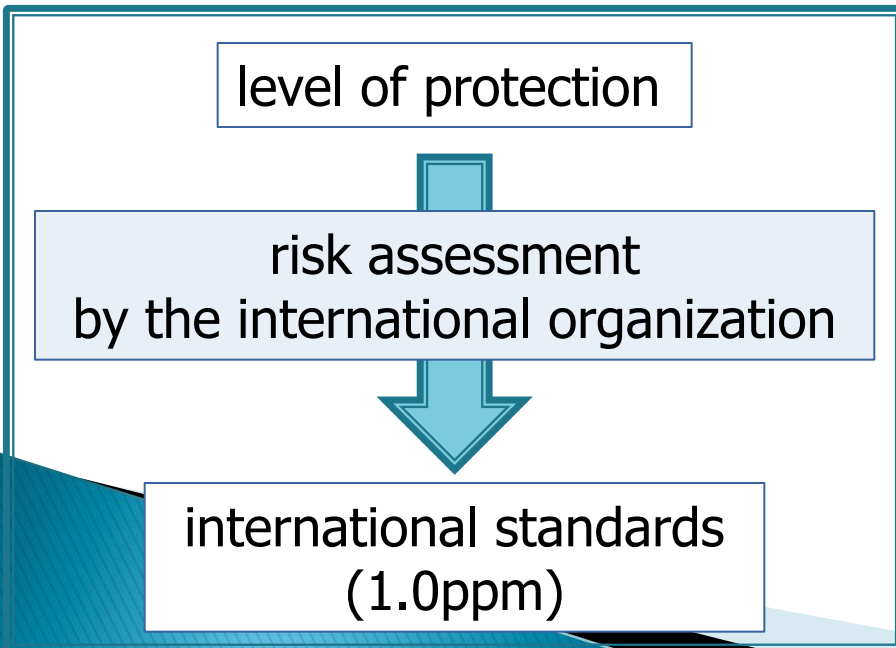
The relationship between WTO and TPP



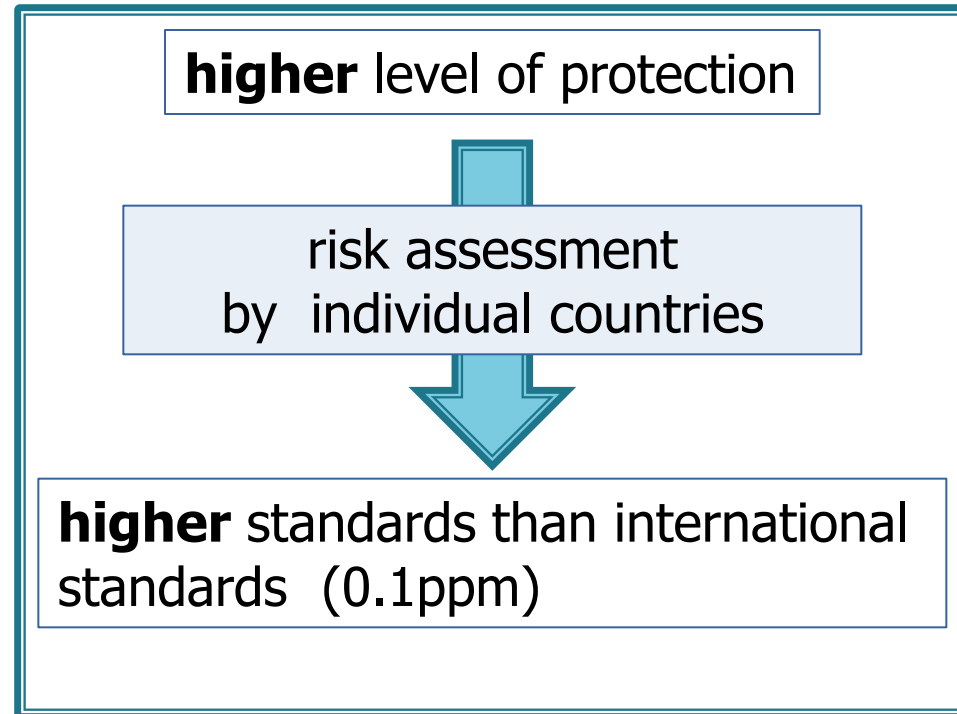
The structure of WTO-SPS agreement: Harmonization or Downward Harmonization?

individual countries can restrict food import if they have scientific evidence

international standards



standards of individual countries



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.

an Argument against TPP

- ▶ Some people say that Japan's strict food-safety measures could be degraded to the level of America's.
- ▶ Comparing both countries' existing measures of residual pesticide in rice, for example, the limit of the insecticide Chlorpyrifos is 0.1 ppm in Japan, while it is 8 ppm in the US, which is 80 times higher than Japan's standard. Japan's measures may be lowered to the level of America's?

Misunderstanding international law

- ▶ The SPS Agreement intends to harmonize each country's measures with international standards, but not with a specific country's measures, such as those of America.
- ▶ If a country's measures were to be required to be identical to another country's, it would be an **infringement of sovereignty and a violation of international law.**
- ▶ It is **against the basic principle of the SPS Agreement** that each country has the sovereign right to implement its own SPS measures.
- ▶ **The framework of the WTO's SPS Agreement will be maintained!**

Japanese standard is stricter?

- ▶ Even though the ADI is the same both in Japan and in the US, a higher level of residual pesticides in rice is allowed in the United States than in Japan because Americans consume less. ⇒ It is no use to discuss which country's standards are stricter by comparing the standard values of residual pesticides in each foodstuff.
- ▶ **Compare the ADI** in each country. America's ADI of Chlorpyrifos (0.0003mg/kg/day) is smaller than Japan's (0.001 mg), while Japan's is smaller than the international standard (0.01 mg). American standard is the strictest among the three.

Japan's GMO labeling shall be the same as US's?

- ▶ US labeling is **not obligatory**. But more than 30 states demand labeling
- ▶ Japan (Australia, NZ)
 - soybeans**: labeling is **obligatory** unless the GMO contained in them is less than 5% (1% in Australia, NZ)
 - Tofu** : labeling is **obligatory** because DNA remains
 - Shoyu and oil** : labeling is **not obligatory** because DNA does not remain
- ▶ **EU** labeling is **obligatory** for all products unless the GMO contained in them is less than 0.9%

ISDS ruins food safety regulation?

- ▶ ISDS clause exists in 24 agreements involving Japan such as those with China and Thailand.
- ▶ Japanese companies should sue the Thai government but US companies should not sue Japanese government?
- ▶ US companies can sue Japanese government taking advantage of FTA between Japan and Thailand. But so far no cases.
- ▶ In the 16 cases of US companies vs Canada in NAFTA, US companies won 2 cases, Canada won 5 cases.
- ▶ In the US model ISDS clause, regulations of environmental protection and public hygiene are out of its scope as long as they are not discriminatory.

Some remedies to free trade(1)

- ▶ The more benefits people get from consumption, the more risk they are willing to accept. **The difference of societal benefits or concerns leads to different ALOPs among countries, though the level of risks assessed by science is the same.**
- ▶ In order to determine an ALOP, **we had better introduce the notion or idea of cost–benefit analysis** into the SPS Agreement. The requirement of consistency of ALOP in similar conditions should be interpreted less rigorously.

Some remedies to free trade(2)

- ▶ Apply **non-fault liability** according to the "Draft principles on the allocation of loss in the case of transboundary harm arising out of hazardous activities" by the United Nations International Law Commission (UNILC) to the issue of food safety.
- ▶ It will not only **address the concerns in the importing countries by compensating for actual loss** but have effects to **prevent damage to human or animal health**.