

“Strengthening Public-Private Partnership to Reduce Food Losses in the Supply Chain” (APEC/PPFS & ATCWG Multi-Year Project M SCE 02 2013A)



Opening Remark:

2016 APEC Expert Consultation on Food Loss and Waste at Retail and Consumer Levels

Ching-Cheng Chang

Research Fellow, Academia Sinica

Professor, National Taiwan University

Chinese Taipei

July 18~19, 2016

Outline

- **Introduction**
 - APEC MYP on Reducing Food Loss and Waste
 - APEC Food Security Roadmap Towards 2020
 - Outcome of 2013~2015 Activities
- **Agenda of 2016 Expert Consultation**
 - Our Mission
 - Where Are We?

Reducing Food Losses and Waste is Gathering Increasing Global Interests and Actions!!

Food and Agriculture Organization of the United Nations

Google Custom Search

About FAO | In Action | Countries | Themes | Media | Publications | Statistics | Partnerships

العربية 中文 English Français Pycckий Español

SAVE FOOD: Global Initiative on Food Loss and Waste Reduction

Background News and multimedia Partners Projects and activities Regional Resources Login Register

Messe Düsseldorf and interpack Declaration

FAO and Messe Düsseldorf lead the SAVE FOOD - Global Initiative on Food Loss and Waste Reduction

FAO and Messe Düsseldorf are collaborating with donors, bi- and multi-lateral agencies and financial institutions and private sector partners (the food packaging industry and others) to develop and implement the programme on food loss and waste reduction.

Our Mission

initiative SAVE FOOD Solutions for a world aware of its resources

Join the SAVE FOOD Network



Key Findings



Regional Initiatives

- The Sixth Tokyo International Conference on African Development (TICAD-VI)**
27 - 28 August 2016, Nairobi, Kenya
TICAD-VI will be a milestone of the TICAD process, since it will be the first-ever TICAD Summit to be held in the African continent in its over 20 years of history.
- Country Report Consultation on national food waste policy in Europe**
FUSIONS launched a consultation to finalize the inventory and analysis of current legislations and policies impacting food waste generation for the EU and its 28 Member States and EEA.

Our Partners



Check out the recent partners' action!



The New York Times

By Sophie Egan July 15, 2016 5:45 am

Ask Well: Can You Eat Foods Past the 'Sell By' Date?

QUESTIONs:

Although the USDA food safety chart recommends that chicken, for example, only be kept in the fridge for two days, the "sell by" dates for chicken sold in refrigerators in stores is much longer than that.

- Why is there this discrepancy, and which is correct?

Reader Question • 137 votes

- How important is the "best if used by" date?

Back when I was a kid, only perishables such as milk, mayo, meat, fish, cheese, and butter carried "sell by" dates. But today, many other products dried herbs and spices, canned goods, frozen goods, cold and hot cereals carry a label stating that the product is "Best If Used By" a certain date.

- Is it in fact important for one's health to follow such guidelines?

- Are these labels, at least in some cases, merely a ploy to get consumers to throw out perfectly usable goods and buy more of the manufacturer's products?

Asked by Someone • 73 votes

The New York Times

By Sophie Egan July 15, 2016 5:45 am

Answer:

- **The vast majority of food date labels**, including “sell by,” “use by” and “best if used by,” are food manufacturers’ suggestions **for peak freshness and taste**, rather than indicators of food safety or health concerns.
- Such labels can be difficult to navigate, though, because the **definitions of the terms aren’t standardized**, and **labeling practices can vary by product type and manufacturer**.
-
- To address consumer confusion and reduce waste, a proposed bill called the **Food Date Labeling Act** seeks to create a **uniform national date labeling system** with just two labels: one for **quality**, “**best if used by**,” and one for **safety**, “**expires on**.”

APEC Multi-Year Project



Title:

“Strengthening Public-Private Partnership to Reduce Food Losses in the Supply Chain” (APEC/PPFS & ATCWG Multi-Year Project M SCE 02 2013A)

Purposes

- Identify **key issues** on reducing food losses and wastes
- Seek **best practices** in private and public sectors
- Find **practical solutions** and enhance **capacity-building**

Work Plan (2013-2018)

2013

- Preparation, Research, and Identification

2014/16

- Investigation of Food Losses and Waste

2017/18

- Action and Inter-linkages

Relevance to APEC Community

- **2012 APEC Leaders' Declaration**
 - *“**reduce post-harvest losses** along the entire food supply chain...”*
- **2014 APEC Leaders' Declaration**
 - *Par 46: “We endorse the Beijing Declaration on APEC Food Security issued at the Third APEC Ministerial Meeting on Food Security. We welcome **APEC Action Plan for Reducing Food Loss and Waste**, the APEC Food Security Business Plan (2014-2020), and the **APEC Food Security Roadmap toward 2020** and the Action Plan to Enhance Connectivity of APEC Food Standards and Safety Assurance.”*

APEC Food Security Roadmap Towards 2020

- *Enhance food supply efficiency, provide more affordable food for lower income consumers.*
- *APEC economies will strive to **reduce food loss and waste by 10% compared with the 2011-2012 levels by 2020** in the Asia-Pacific economies*
- *Aim to advance beyond the **Millennium Development Goals 2015** hunger goals.”*

APEC Food Security Roadmap Towards 2020

Priority Activities by WG

1. **WG1. Sustainable Development of the Agricultural and Fishery Sectors**
2. **WG2: Facilitation of Investment and Infrastructure Development**
3. **WG3: Enhancing Trade and Markets**
 - a. Facilitating trade in food and agricultural products.
 - b. *Reducing food losses and waste.***
 - c. Improving governance frameworks.
 - d. Promoting, studying and sharing of best practices of risk management methods among stakeholders in order to strengthen food security.
 - e. Incentivizing trade and production to encourage increased output and yields in a sustainable manner.

APEC Food Security Roadmap Towards 2020

-- Reducing Food Losses and Waste

1. Develop **unified methodologies** to estimate food losses and waste.
2. Identify **major sources** of food loss and waste in the distribution channel, and compile regional strategies for specific products in both developing and industrialized economies
3. Introducing **a plan** for striving toward a **targeted rate** of food loss and waste reduction
4. Facilitating the sharing of **best practices** in the APEC region.
5. Strengthening food supply chains and reducing food losses in **developing economies** through **public-private partnerships**

Outcome-1 Experience Sharing Seminars

Toolkits and Best Practices

2nd APEC Seminar on Vegetable and Fruits Beijing, Sept 15, 2014

Agenda

- ◆ Main Issue in vegetable & fruit supply chain in APEC
- ◆ Best practice of enhancing PPP in vegetable & fruits
- ◆ Innovative technology and management
- ◆ Develop assessment methodology and dataset



Achievements

Key Findings on Food Security

- ◆ Measuring food loss is challenging and data intensive
- ◆ Information exchange of best practices & traceable supply-chain management contribute to strategic approach development
- ◆ Loss prevention can be a priority to launch a regional PPP initiative

Public-Private Partnership

- ◆ PPP is important in food supply chain management for quality, postharvest decay, and food safety assurance
- ◆ Partnership could be costly and effort/time-consuming, so needed to become successful and sustainable

1st APEC Seminar on Food Grain Taipei, Aug 5-8, 2013

Agenda

- ◆ Main Challenges of Food losses and Food Security
- ◆ Key Issues of PPP in Reducing Post-Harvest Losses
- ◆ APEC Best Practices
- ◆ Next Steps and Future Action Plans



Achievements

Key Findings on Food Security

- ◆ Only 5% of agricultural R&D investment on post-harvest
- ◆ Promising post-harvest technologies and management options available
- ◆ Recycling for nonedible losses needs government support

Public-Private Partnership

- ◆ Public sector + Private sectors + NGOs & Academia Initiatives + Retailers + Consumers

Knowledge-Sharing Activities in 2015 APEC 2015 APEC Seminar on Fishery and Livestock Supply Chain Iloilo, Philippines, Sept 27, 2015

Agenda

- ◆ APEC fishery and livestock loss status and methods
- ◆ Best practice of enhancing fishery and livestock PPP
- ◆ Innovative technology and management
- ◆ Develop assessment methodology and dataset



Achievements

Key Findings on Food Security

- ◆ A systematic approach is needed to investigate the multi-dimensional aspects of food loss including: genetics, production, food safety, postharvest quality, logistic process, infrastructure improvement, consumer behaviours
- ◆ Customized capacity building and infrastructural investment on energy-saving cold chain are essential for loss reduction in fishery and livestock

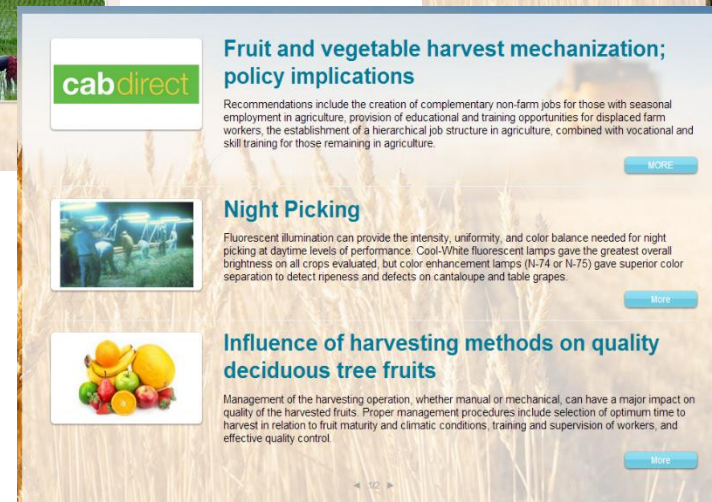
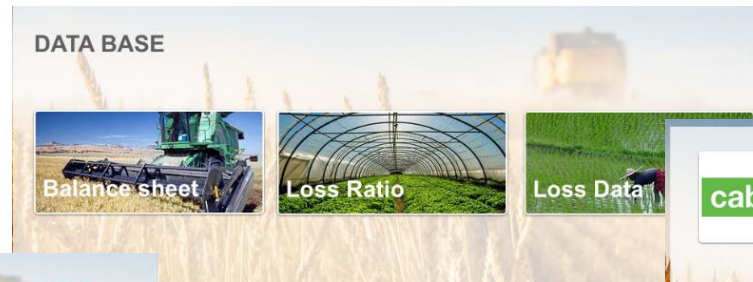
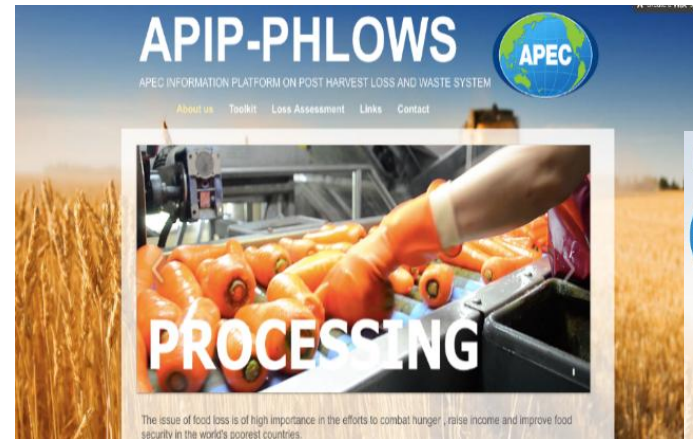
Public-Private Partnership

- ◆ Government need to provide economic incentive and adaptation mechanism for facilitating technology adoption and market access
- ◆ PPP requires not only government and industry but need to involve academics, the community and the general public for collaboration and awareness.

Outcome-2 Information Platform

- **APIP-PHLOWS**
 - Open Data
 - As a Knowledge Bank
- **Key features**
 - Loss estimates
 - Toolkits
 - Best practices

QR code



Outcome-3 Unified Methodologies

- Definition & Scope
- Causes & Impact Assessment

“Mass Flow Model (MFM) of FAO

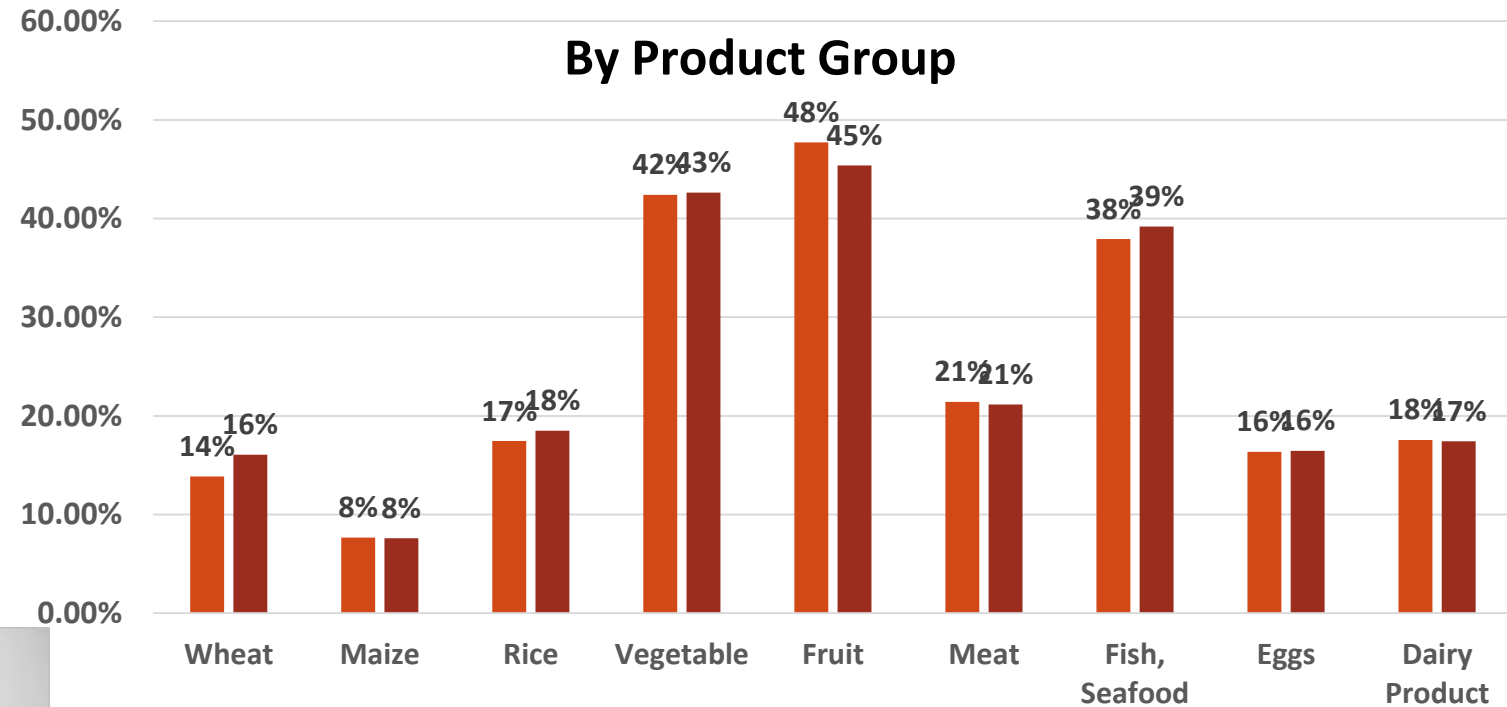
- Measurable quantitative losses along the food supply chain starting with harvest until consumption by end users.”

Stages	Definition
Production and Harvesting	Contains losses due to mechanical damage and/or spillage during harvest operation, crop sorting etc.
Handling and Storage	Contains losses due to storage and transportation between farm and distribution, and spillage and degradation during handling.
Processing and Packaging	Includes losses during industrial or domestic processing and packaging
Distribution and Marketing	Includes losses and waste in the market system, including wholesale markets, supermarkets, retailers, and wet markets.
Consumption	Includes all the losses and waste at the household level.

Source: Linpinski et al .(2013); Gustavsson et al., (FAO 2011)

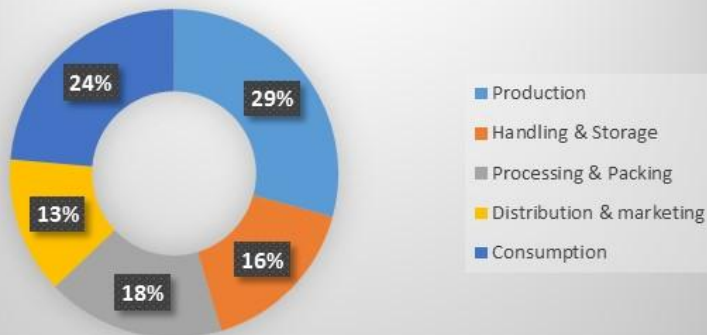
Outcome-3 Unified Methodologies

APEC Food Loss and Waste in Volume Base



■ Loss % over Total Production ■ Loss % over Total Utilization

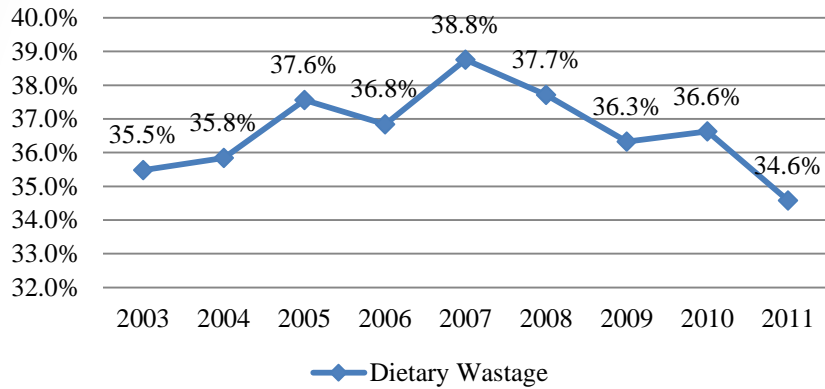
By Stage along the food value chain



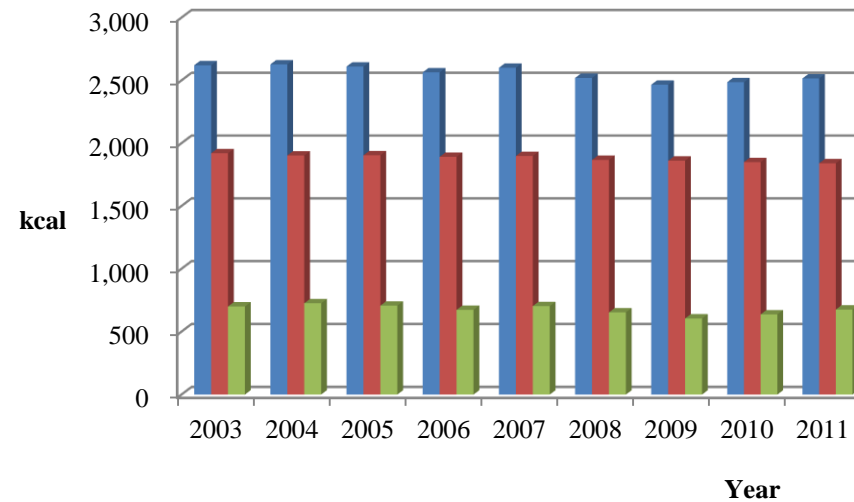
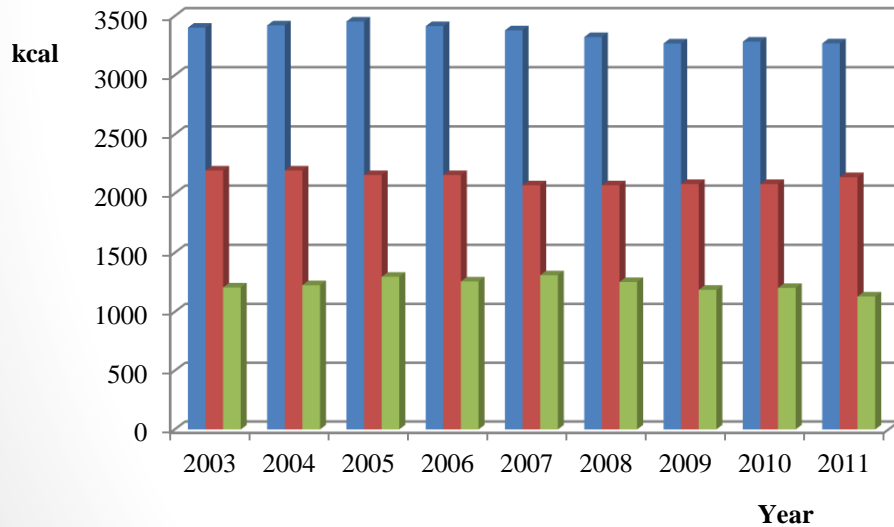
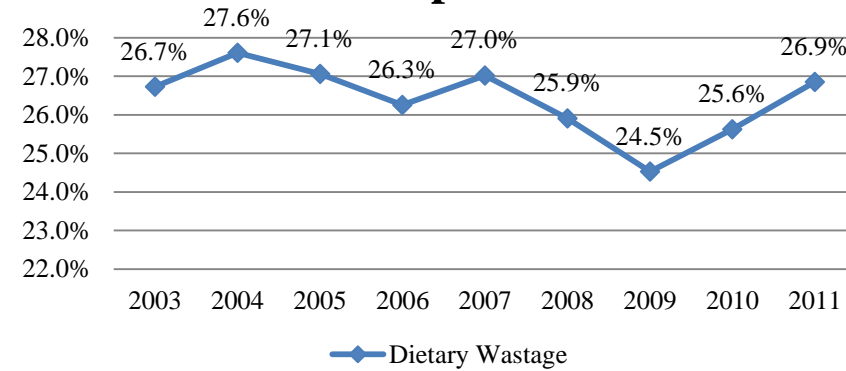
Food Waste in Calorie:

2 Case Studies from Dietary In-take Survey Data

The United States



Japan



■ Per Capita Food Supply ■ Dietary Energy Intake ■ Dietary Wastage

■ Per Capita Food Supply ■ Dietary Energy Intake ■ Dietary Wastage

based on FAO's working paper titled "Estimating household and institutional food waste and losses" by Sibrian, Komorowska, and Mernies (2016).

Outcome-4 Capacity Building & Consultation

Issues on Reporting, Continuity, and Capacity Building in Food Loss: Experience from USDA with a Focus on Meat, Poultry, and Seafood Loss

Jean C. Buzby, Economic Research Service, USDA, USA

Initiatives

1. Losses at the primary level—farm to retail weight

- University of Minnesota's Food Industry Center (TFIC) Pennsylvania State University and the International Life Sciences Institute (ILSI)
- Data from surveys/meeting with producers

2. Losses at the retail level

- “Supermarket Loss Estimates for Fresh Fruit, Vegetables, Meat, Poultry, and Seafood and Their Use in the ERS Loss-Adjusted Food Availability Data” (2009)
- Shipment data minus sales data for each item (2005-06 data)
- 2011-12 data in forthcoming report



3. Losses at the consumer level

- “Consumer-Level Food Loss Estimates and Their Use in the ERS Loss-Adjusted Food Availability Data” (2011)
- Nielsen Company’s Homescan® data for 2004 (food purchases from retail outlets) and the National Health and Nutrition Examination Survey (NHANES) for 2003-04 (food consumption) for each item

ERS Food Loss-Adjusted Food Availability (LAFA) Data Series

- Primary purpose: Provide per capita **food availability** estimates of:
 - Amount (e.g., grams, ounces, pounds),
 - Calories
 - Food pattern equivalents (i.e., “servings”)
- Secondary purpose: Provide **food loss** estimates at the retail and consumer levels in the U.S.
 - Amount
 - Calories
 - Value

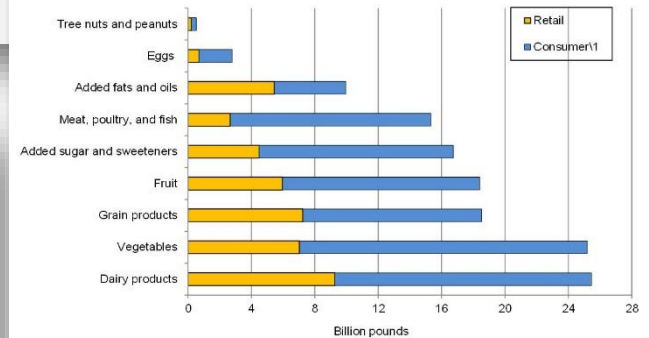
Estimated Retail and Consumer Level Meat, Poultry, and Seafood Loss in the United States, 2010

	Million pounds	Million dollars	Percent loss
Top 3 foods by percent loss			
Fresh and frozen shellfish	725	\$4,949	46
Fresh and frozen fish	873	\$3,599	45
Veal	41	\$248	40

Top 3 foods by losses in dollars:			
Pork	4,409	\$12,756	32
Chicken	3,302	\$11,728	18
Beef	4,125	\$9,836	23

Top 3 foods by losses in pounds:			
Pork	4,409	\$12,756	32
Beef	4,125	\$9,836	23
Chicken	3,302	\$11,728	18

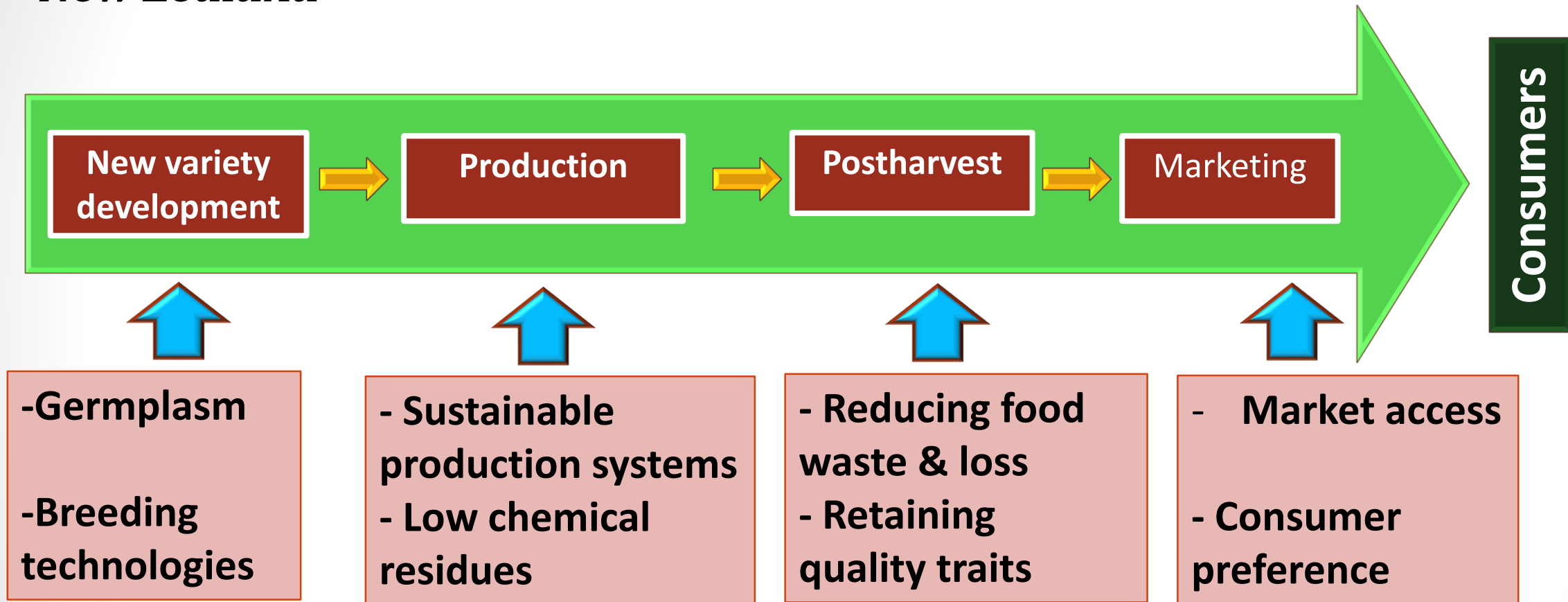
Quantity losses at the consumer level are larger than retail level losses for all categories except added fats and oils



¹ Includes loss in the home and in away-from-home locations. Includes cooking shrinkage and uneaten food. Source: http://www.ers.usda.gov/amber-waves/2014-june/food-loss%2680%94questions-about-the-amount-and-causes-still-remain.aspx#VT_zXCFVko

Outcome -5 Strengthening Food System

A Value Chain Approach: Input of Science-based Agricultural Services *New Zealand*



Source: Dr. Ian Ferguson (2015)'s presentation in APEC Seminar on *Strengthening Public-Private Partnership to Reduce Food Losses in the Supply Chain of Fishery and Livestock*, Iloilo, Sept 27, 2015.

<http://apip-phlows.econ.sinica.edu.tw/index.php/seminar-reports/2015-myp/agenda>

Our Mission in 2016

(1) Experience Sharing & Discussion

1. Identify and share expert knowledge of the causes and consequences of food waste by the retail sector and consumers in the Asia-Pacific region.
2. Refine the assessment of food losses and waste based on food-intake and other related surveys in the Asia-Pacific region.
3. Understand consumers' food choices and the roles of retailers in the development of sustainable waste prevention, reduction, recovering and recycling strategies.
4. Begin the dialogue on crafting solutions and identify potential barriers to policy formation/adoption on food waste prevention, reduction, recovering and recycling.

Our Mission in 2016

(2) Review Evidence of Food Waste in APEC MEs

- **New Zealand:**
 - Food waste to landfill estimated at 61.2kg per person per year. (WasteNot Consulting, 2013) (=0.28 Million ton per year)
- **Hong Kong:**
 - approximately 3,648 tonnes food waste produced every day (= 1.3 million ton per year)
 - 1/3 from commercial and industry and 2/3 from households, representing 11% and 27% respectively of the municipal solid waste
- **Japan:**
 - Food waste in retail and households reduced from 14.4 in 2010 to 13.5 mill ton (Mt) in 2011 (OECD Food waste database)
- **Chinese Taipei:**
 - approximately 36,880 ton of food was disposed by the retail and restaurants each year
 - 3.8 billion NTD of food was disposed by the retail sector 30% went to the landfill.

Our Mission in 2016

(3) APEC Food Security Week, Sept 21-27, 2016, Peru

◆ Theme: "Quality Growth and Human Development"

- ◆ How APEC's traditional trade and investment work can help each economy achieve its development goals, taking into consideration the human and environmental dimensions of economic growth?

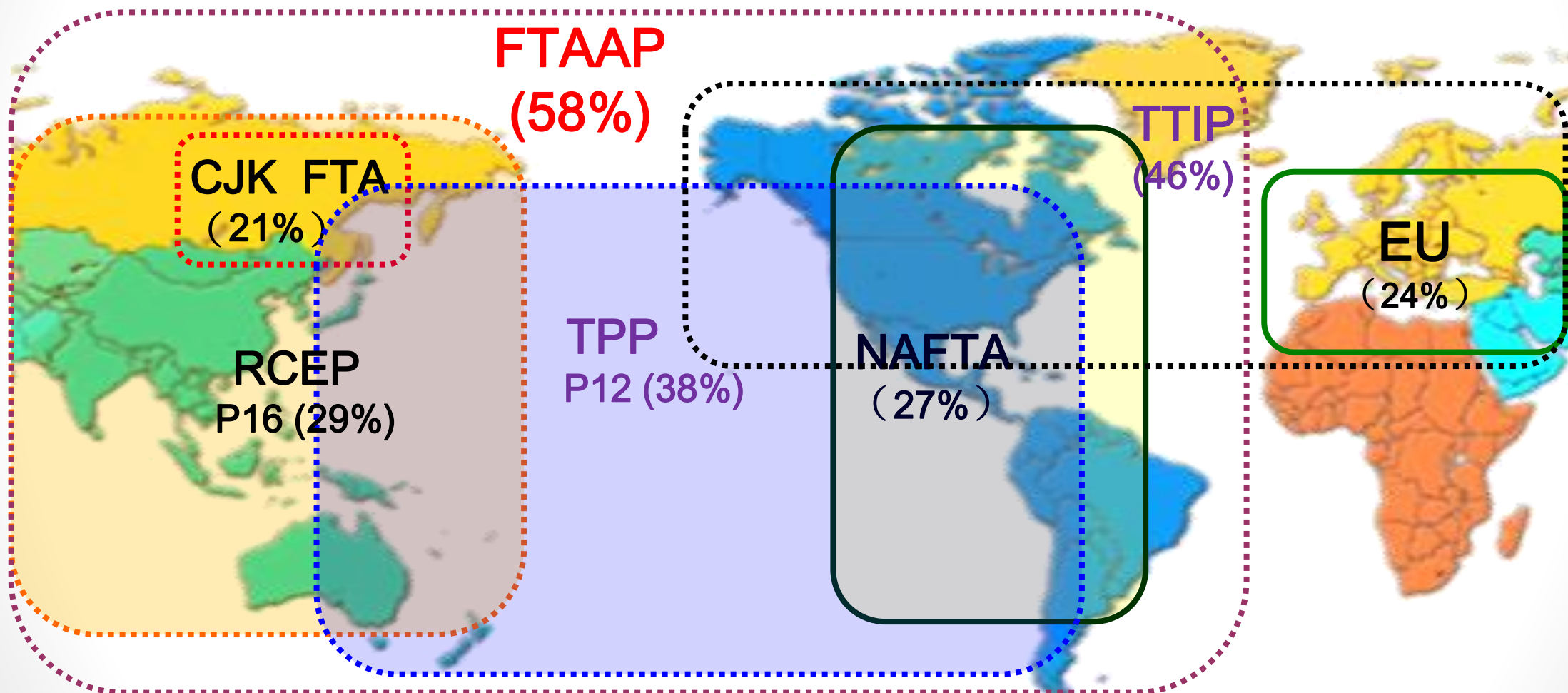
◆ 2016 Capacity Building Seminar on Reducing Food Waste by Retail Sectors and Consumers, September 22, Peru.

1. Identify and share **expert knowledge**.
2. Build consensus and **incentives for PPP** to reduce food waste
3. Identify **best practices** and **potential barriers** for policy adoption/formation
4. Craft **recommendations for strategies** that improve food security and reduce food waste

Where Are We Now?

Global Movement of FTAs → Challenges from an Open Food System

(Numbers in parenthesis is the Percentage of the GDP in each FTA in World Total GDP)



Source : IMF, *World Economic Outlook Databases (WEO)*, October 2013 .

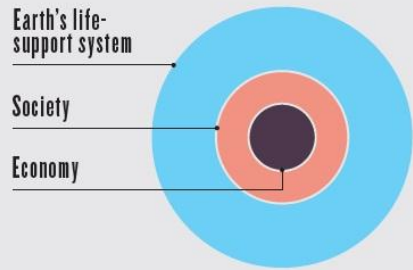
Where Are We Now?

Global Warming → Challenges from Paris Agreement (2015)

A UNIFIED FRAMEWORK

A set of six sustainable development goals (SDGs) follow from combining the Millennium Development Goals (MDGs) with conditions necessary to assure the stability of Earth's systems.

NEW PARADIGM



NEW DEFINITION

Sustainable development in the Anthropocene: "Development that meets the needs of the present while safeguarding Earth's life-support system, on which the welfare of current and future generations depends."

People

UPDATED MILLENNIUM DEVELOPMENT GOALS

- End poverty and hunger
- Universal education
- Gender equality
- Health
- Environmental sustainability
- Global partnership

Planet

PLANETARY MUST-HAVES

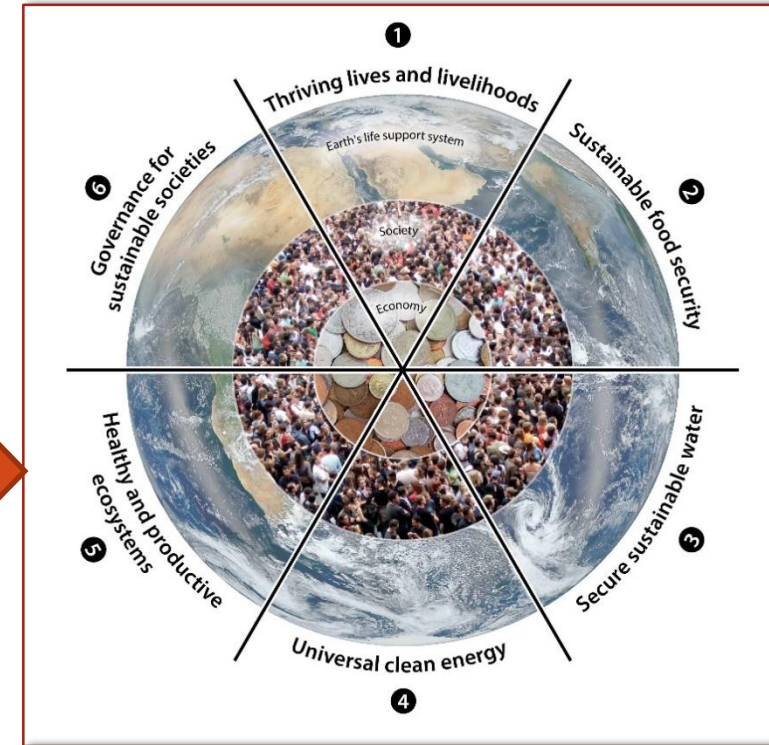
- Materials use
- Clean air
- Nutrient (N and P) cycles
- Hydrological cycles
- Ecosystem services
- Biodiversity
- Climate stability

SUSTAINABLE DEVELOPMENT GOALS

- Thriving lives and livelihoods
- Sustainable food security
- Sustainable water security
- Universal clean energy
- Healthy and productive ecosystems
- Governance for sustainable societies

MDGs start

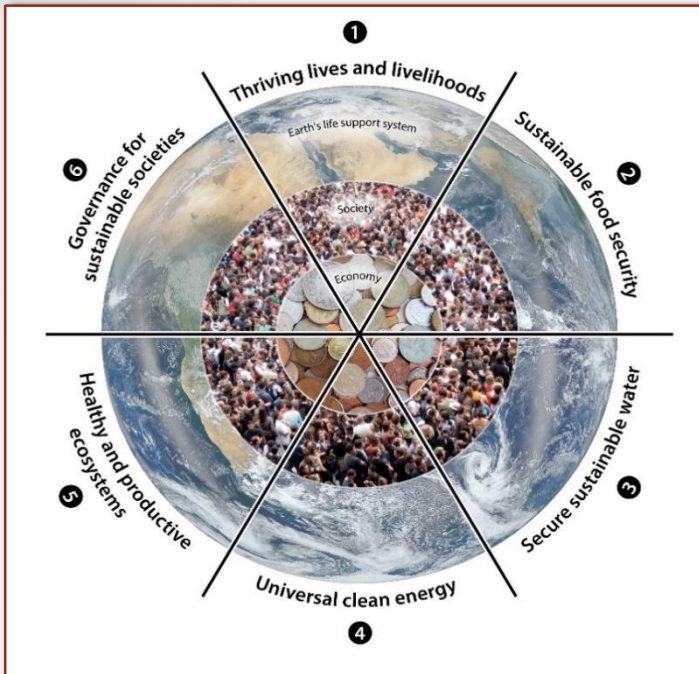
SDGs begin



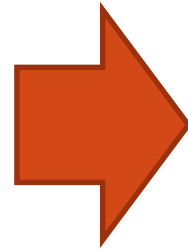
1. Thriving livelihood
2. Food security
3. Water security
4. Clean energy
5. Healthy ecosystem
6. Governance

Source: Griggs D. et al. (2013), Nature, Vol. 495, P. 305-307

Where Are We Heading Toward?



1. Thriving livelihood
2. **Food security**
3. Water security
4. Clean energy
5. Healthy ecosystem
6. Governance



Goal 12:

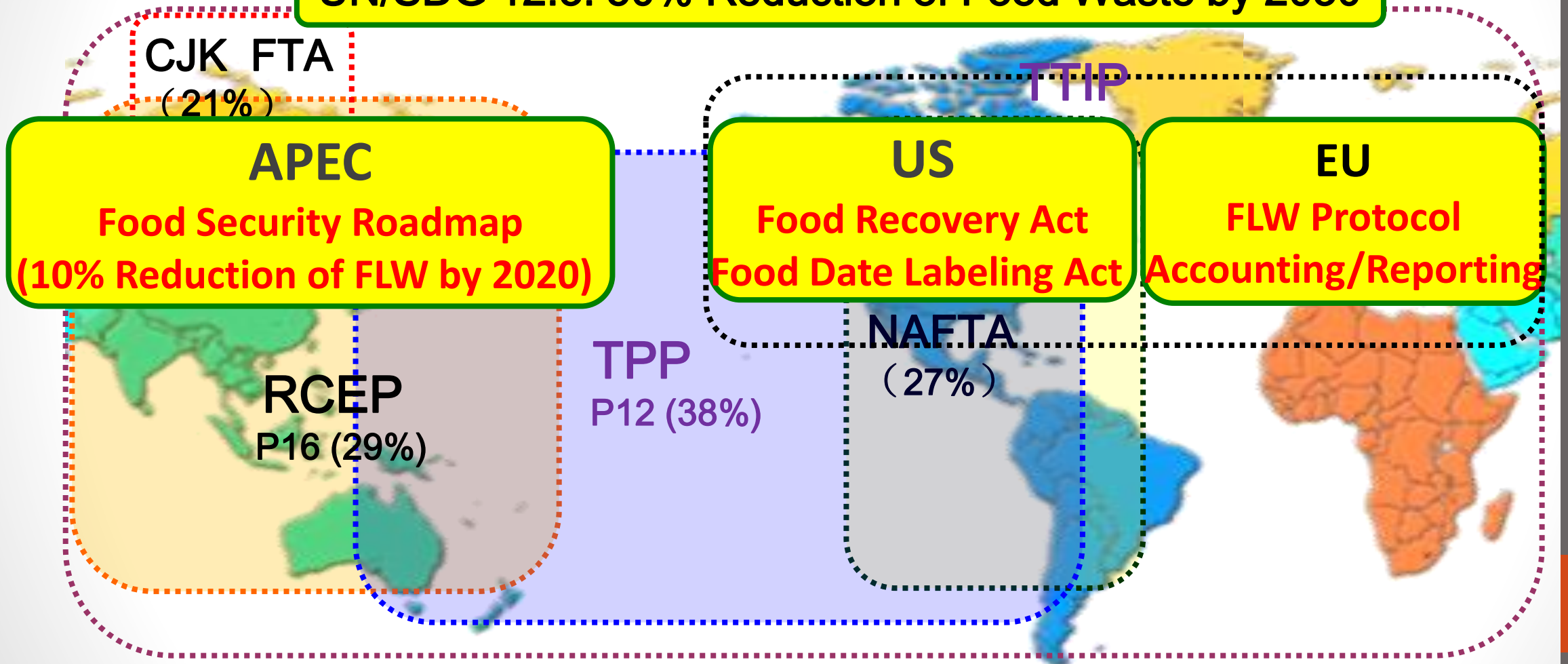
"Ensure sustainable consumption and production patterns" includes

"**halve per capita global food waste** at the retail and consumer level, and reduce **food losses** along production and supply chains **by 2030**".

How to Get there?

Global and Regional Movement of Reducing FLW

UN/SDG 12.3: 50% Reduction of Food Waste by 2030



How to Get There?

- APEC Food Security Roadmap Towards 2020

5. Strengthening food supply chains and reducing food losses in developing economies through public-private partnerships:

- Providing farmers with necessary **technologies** and **managerial knowledge** in handling and storage through **improved extension services**,
- **Facilitating programs** that encourage **smallholder farmers** to **organize**, **diversify** and **scale up** their production and marketing,
- **Enhancing investments** in:
 - Modern agricultural machinery and equipment, storage facilities and transportation **infrastructure**, and
 - Food supply chain with **cold chain infrastructure** in order to develop the **food manufacturing industry** and help **increase revenues** for farm producers.

THANK YOU!!