



**Asia-Pacific  
Economic Cooperation**

**APEC Survey Report on  
Food loss and Waste Reduction Policy  
(Version 1)**

**Agricultural Technical Cooperation Working Group (ATCWG)  
Policy Partnership of Food Security (PPFS)**

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

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## **Chapter 1 Background and Objectives**

Since the APEC Multi-Year Project (MYP) is reaching its final phase, it is essential to synthesize all previous progress and information into policy recommendations and action plans. Following the progress report during the first Senior Official and PPF Meetings in Nha Trang City on Feb 25-27, the project overseer of the MYP conducted a survey entitled: "APEC Food loss and Waste Reduction Policy Inventory Survey". This survey is part of the MYP activities and members' response to this survey will support to better manage food loss and waste and enhance the regional food security by:

- I. Providing information of food loss and waste data collection and reporting system;
- II. Stocktaking public programs, legislations, and private initiatives on food loss and waste reductions;
- III. Identifying available innovative technologies and best practices to prevent, reduce, reuse, recover, or recycle food loss and waste along the food chain;
- IV. Identifying capacity building needs for member economies to implement available innovative technologies and to encourage public and private sectors to collaborate.

The survey output would help us evaluate the previous progress of each APEC economy and further study the feasibility of an APEC food loss and waste data reporting standard as well as to design a capacity building for the developing member economies. We expect the results of the survey will help us identify the future direction for implementing policy and action plans of food loss and waste reduction.

## **Chapter 2 Survey Design**

To obtain a clear and comprehensive picture of APEC economies, the survey gathered information on an economy-level, with both quantitative and open questions. The former could help us collect data for quantitative analysis and the latter could help us collect different opinions. This survey was circulated to APEC economies in May, 2017, and replied by 15 economies as a result. This section will provide detailed questionnaire structure and the characteristics of these economies.

### **2.1 Questionnaire structure**

According to the mapping of the questions shown in Table 1, this questionnaire was divided into three sections: basic information, existing food loss and waste reduction programs/initiatives/action plans, and implementation of the existing programs/initiatives/action plans. First, we collected basic information about the current status of promoting food loss and waste reduction in each economy. Second, we

focused on evaluating existing programs and identifying the strengths and weaknesses of each economy. Third, we tried to further study the feasibility of 10% food loss and waste reduction target by 2020. The comprehensive questionnaire could be found in Appendix A.

Table 1 Mapping of Questions

<b>Q1: Basic Information</b>	
1.1	Is there any data collecting/accounting/statistics system for tracking and reporting of food loss and waste along the food chain in your economy?
1.2	What are the major sources and quantities of the “edible” food loss and waste along the food chain from harvest to consumption in your economy?
1.3	Which agencies/organizations (including NGOs and NPOs) are engaged in the reduction, recovery, reuse or disposition for “edible” food loss/waste (e.g. food bank, foreign aid, feed, biomass, organic compose, ..., etc.), and what are their roles and main activities?
<b>Q2: Existing Food Loss and Waste Reduction Programs/Initiatives/Action Plans</b>	
2.1	Does your economy have any government programs/projects or action plans (e.g., cold chain investment, financing, consumer education, employee training, date labeling, IT tracking, food donation, ... etc.) for promoting or implementing food loss and waste reduction in food chain?
2.2	How do you rate these program/project in terms of food loss and waste reduction efforts?
2.3	In your opinion, for a successful implementation of food loss/waste reduction programs, are the following factors strengths or weaknesses in your economy?
<b>Q3: Implementation of the Existing Programs/Initiatives/Action Plans</b>	
3.1	Considering the reduction target of 10% food loss and waste in comparison to 2011-12 levels as proposed by the “APEC Food Security Roadmap Towards 2020”, how likely will it be to reach the target in your economy?
3.2	What is your recommendation to support the implementation of these programs/initiatives?
3.3	What are the major barriers to successfully reduce 10% food loss and waste by 2020 in your economy?
3.4	Is there any Food Waste Law or Act that provides immunity from liability of food donors or protection for food reuse from being sued in the event of consumer sickness in your economy?
3.5	Are there any innovative technologies or best practices on prevention, reduction, recovery, recycling of food loss and waste you believe would help support the implementation?
3.6	Are there any capacity building needed to increase the adoption of innovative technologies or best practices to support the implementation in your economy?

## 2.2 Characteristics of the Respondents

This section presents basic information on our 15 respondents, including their geographic location, income level and development status.

### I. Geographic location

According to the United Nations (UN), areas and territories are classified geographically into groups. Figure 1 shows that the largest proportion (40%) of our respondents are located in south-eastern Asia, 20% of them located in eastern Asia, 13% of them located in south America, and the rest of them, which took 6-7% each, are located in central America, north America, eastern Europe and Oceania.

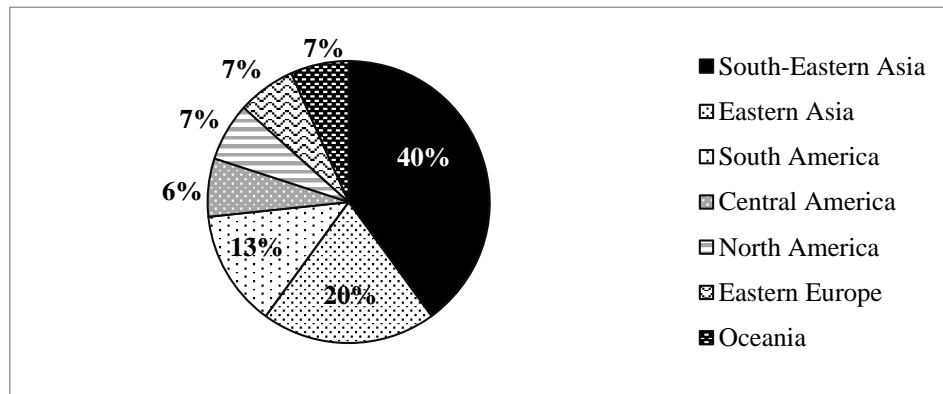


Figure 1 Geographic Location of Respondents

### II. Income Level

According to the World Bank's economy classification for the current 2018 fiscal year, income level of all the economics could be divided into four categories: low-income economies (\$1,005 or less Gross National Income per capita in 2016), lower-middle-income economies (\$1006-3955), upper-middle-income economies (\$3,956-12,235) and high-income economies (\$12,236 or more). Of our 15 respondents, as shown in Figure 2, 20% of them are lower-middle-income level, 33% of them are upper-middle-income level, and the other 47% of them are high-income level.

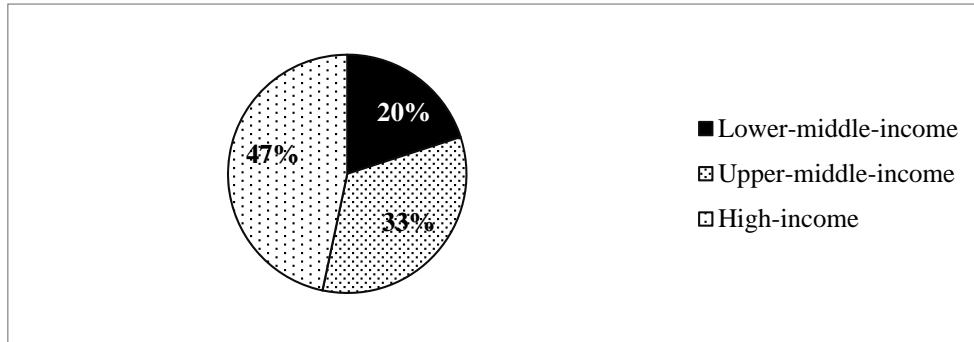


Figure 2 Income Level of Respondents

### III. Development status

Based on the International Monetary Fund (IMF), regions are classified as “advanced economies” and “emerging market and developing economies”. According to Figure3, 40% of our respondents are classified as advanced economies, and the other 60% of them are emerging market and developing economies. In other words, a majority of our participants are still seeking to become more advanced economically and socially.

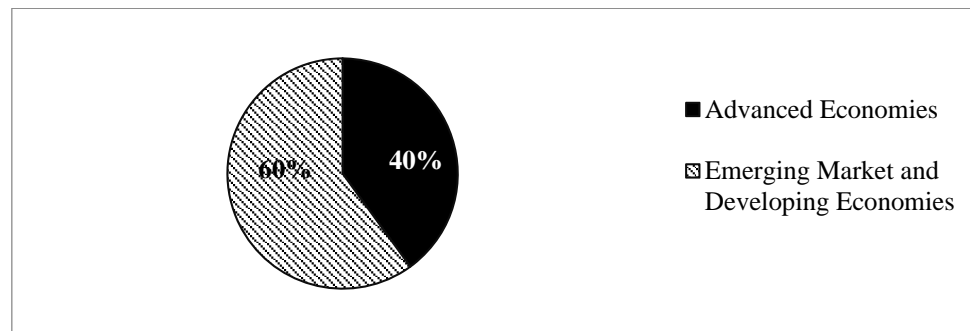


Figure 3 Development Status of Respondents

## Chapter 3 Survey Results

In this session, we report the survey results basically following the three sections in our questionnaire structure: basic information, existing food loss and waste reduction programs/initiatives/action plans, and implementation of the existing programs/initiatives/action plans. To further study the results, we divided these economies into two groups: “advanced economies” and “emerging market and developing economies (hereafter denoted by developing economies)”, based on the IMF’s classification. The respondents are listed below, with 6 economies classified as advanced economies, and 9 economies classified as developing economies.

Advanced Economies	Developing Economies
Chinese Taipei, Hong Kong, Japan, New Zealand, Singapore, United States	Chile, Indonesia, Malaysia, Mexico, Peru, Philippines, Russia, Thailand, Vietnam

Table 2. List of Respondents from APEC economies

### 3.1 Basic Information

Figure 4 shows the current status in terms of the fundamental facilities for reducing food loss and waste in APEC economies. From this perspective, advanced economies and developing economies reported similar status. Most of the economies have existing data collecting system for tracking and reporting of FLW, innovative technologies or best practices and capacity building needed to increase the adoption. Nevertheless, in the aspect of Food Waste Law, only 3 of the economies have enacted laws to provide immunity from liability of food donors or protect for food reuse from being sued in the event of consumer sickness. In other words, further efforts on legislating Food Waste Law are still needed in most of the APEC economies.

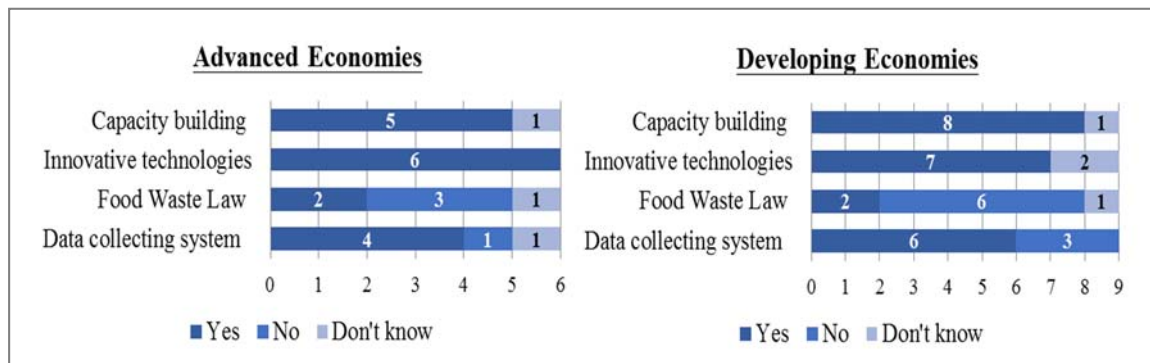


Figure 4 Basic Information

### 3.2 Existing Food Loss and Waste Reduction Programs

In this section, we examined the existing food loss and waste reduction programs in three aspects: basic information of existing food loss and waste reduction programs, ratings of these existing programs, and the strengths and weaknesses in each economy for a successful implementation. The results are presented in Figure 5, Figure 6, Figure 7 and Figure 8 respectively.

#### I. Existing Food Loss and Waste Reduction Programs

All of the economies indicated that they have existing food loss and waste reduction programs. As Figure 5 shows, for advanced economies, with a total amount of 26 programs, the programs are focused evenly on food loss and food waste issues.



On the other hand, as for developing economies, with a total amount of 39 programs, these are mainly focused on food loss issues. Moreover, as shown in Figure 6, advanced economies have larger proportion of programs with public and private sector cooperation (77%) than developing economies (59%).

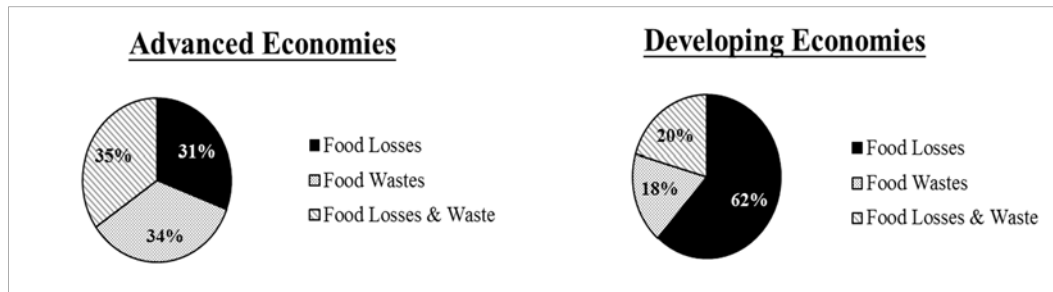


Figure 5 Focus of Existing Programs

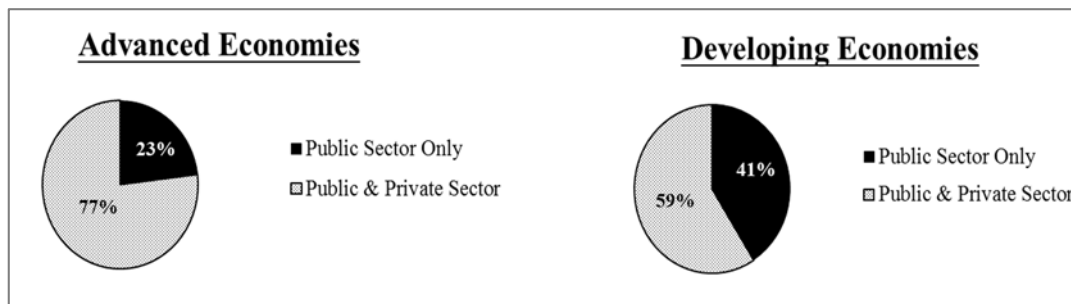


Figure 6 Participants of Existing Programs

## II. Ratings of Existing Programs

To further study the performances of these programs, we asked the economies to rate these programs in terms of food loss and waste reduction efforts. In our questionnaire design, a typical 5-level Likert scale was used to provided close-ended responses (1= very good, 2= good, 3= neutral, 4= poor, 5= very poor). The results are presented in Figure 7. By comparing the results of two groups, the average score of advanced economies are lower than developing economies in every question. In other words, advanced economies have greater performances on food loss and waste reduction than developing economies from every perspective. The most serious problem is consumer awareness in developing economies. This result corresponds to the previous section showing that developing economies largely focused their programs on food loss issues but lack of food waste focus, and therefore, consumer awareness in developing economies is insufficient.

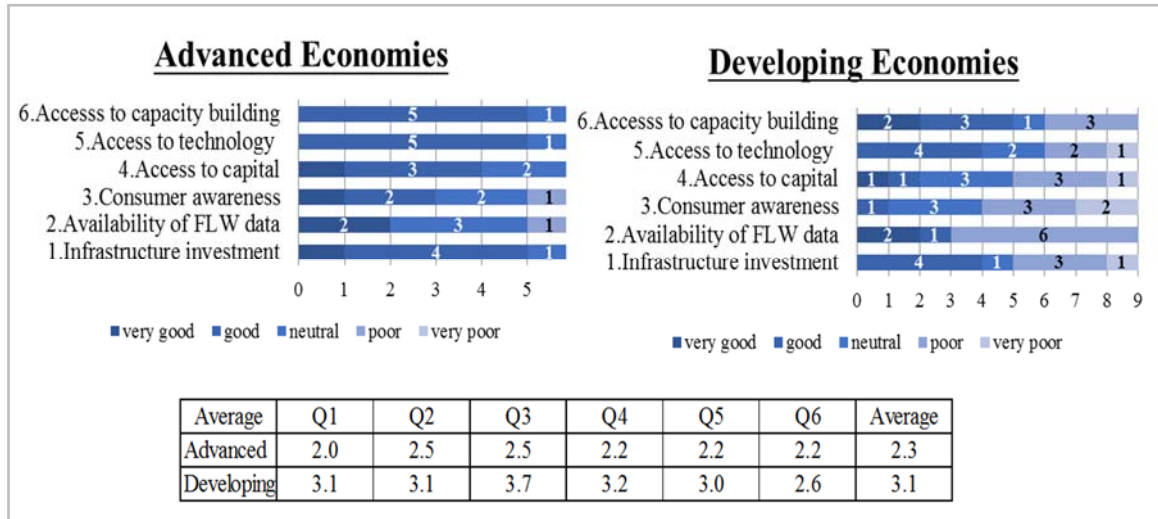


Figure 7 Existing Programs Ratings

### III. Strengths and Weaknesses

As Figure 8 shows, we also asked the economies to identify their strengths and weaknesses for a successful implementation of food loss and waste reduction programs. Almost every advanced economy reported that they have no weakness considering the factors below. However, respondents in developing economies reported a worse result, especially in the perspectives of sufficient funding / financing and monitoring and evaluation of outcomes.

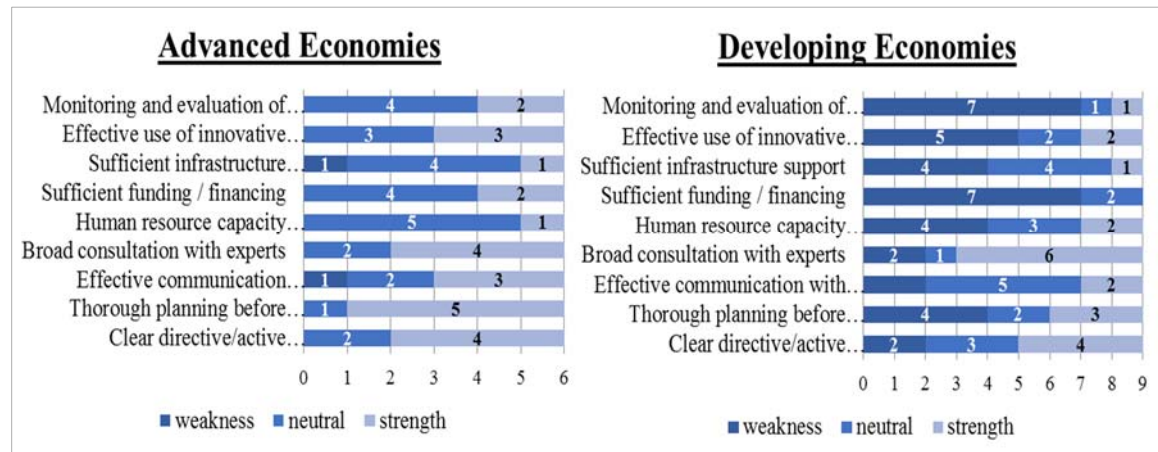


Figure 8 Strengths and Weaknesses

### 3.3 Implementation of the Existing Programs

In this section, we examined the implementation of the existing programs in two areas: how likely is the 10% food loss and waste reduction target to be achieved by 2020, and to identify major barriers. The results are presented in Figure 9 and Figure 10

respectively.

### I. Possibility of achieving 10% food loss and waste reduction target by 2020

To evaluate the possibility of reaching the 10% reduction target, we designed a 5-level Likert scale questionnaire as well (1= very likely, 2= likely, 3= neutral, 4= unlikely, 5= extremely unlikely). According to Figure 9, it is more likely to achieve the 10% reduction target by 2020 in advanced economies than in developing economies. This result also corresponds to the previous section demonstrating that advanced economies have done more effective efforts on food loss and waste programs.

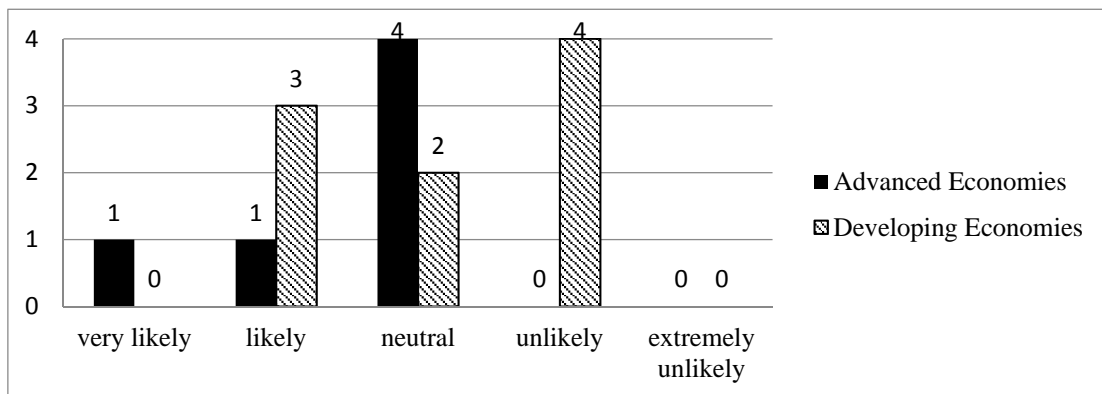


Figure 9 Possibility of achieving 10% reduction target

### II. Recommendation to Support the Implementation

In this section, we asked economies to provide their recommendation to support the implementation of these programs. We present feedback from the following five perspectives. Since the highly diverse nature of the participants’ feedback makes it impossible to display all the comments, so we focus only on common themes here. The full version is attached in Appendix B.

#### i. Financial and/or tax Incentives

In general, our respondents agreed that financial and tax incentives would be beneficial to the implementation. The widely varying suggestions reflected their diverse individual needs. Some suggested providing tax benefits to food donors, farmers or enterprises with innovative technologies, and some suggested providing soft loan or low interest loan for infrastructure and equipment provision.

ii. Inter-governmental coordination

For enhancing the inter-governmental coordination, our respondents suggested that establishing a clear food loss and waste definition, measurement method and goals are essential to the implementation. Moreover, some economies also suggested creating the cohesive programs addressing food loss and waste in each economy.

iii. Public-Private Partnership assurance

The recommendation regarding public-private partnership assurance generally concerned two areas: establishing policies to collaborate with private sector and develop projects, and building up public-private entities. In addition, attracting private investments in new technologies would also be helpful.

iv. Date labeling and food standards refinement

To refine date labeling and food standards, some economies suggested adding information about the correct use and storage methods to the labels, and some economies suggested applying traceability system widely.

v. Experience sharing and technology transfer

Our respondents suggested organizing national seminar and training among agricultures, retailer, food companies and consumers to enhance experience sharing and technology transfer.

### **III. Major Barriers**

We designed a 5-level Likert scale questionnaire to determine how major is the barriers to the 10% reduction target (1= very major, 2= major, 3= neutral, 4= minor, 5= very minor). As shown in Figure 10, advanced economies scored 3.8 as an average regarding to these barriers, representing that they have no serious problem achieving this target. However, developing economies scored only 2.4 about these barriers, representing that they might have difficulties reaching this target, especially in the perspective of insufficient funding, lack of standard and reliable data, and lack of interest from consumers.

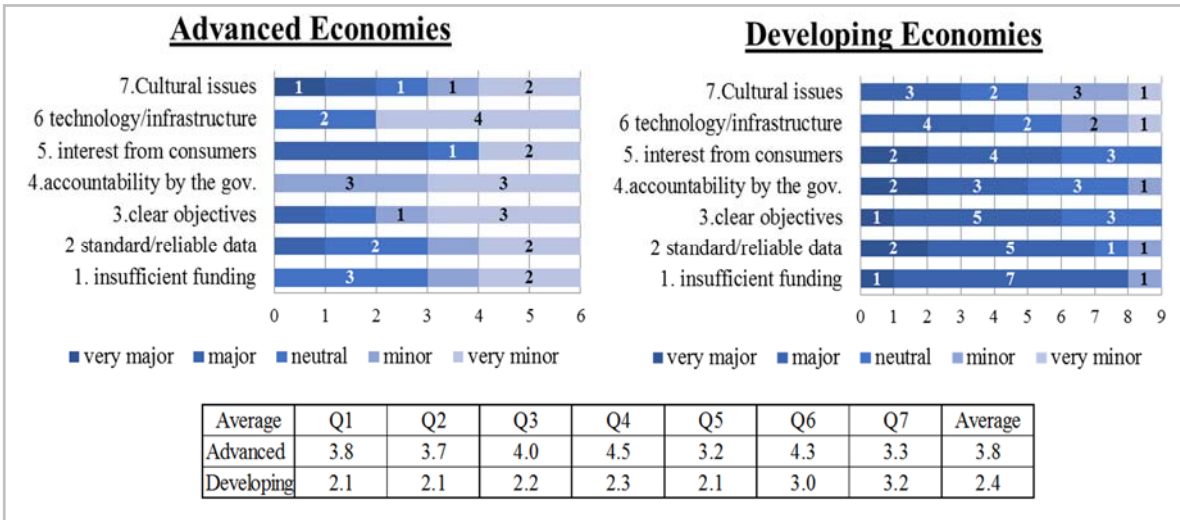


Figure 10 Major Barriers

## Chapter 4 Conclusion

In sum, from our results, there still exist significant differences between advanced economies and developing economies. Obviously, advanced economies have done more effective efforts on reducing food loss and waste. From the perspectives of food supply chain, advanced economies also have better measures on the entire supply chain, while developing economies still focus only on food loss, and thus have worse consumer awareness. Moreover, in developing economies, the most serious problems are: lack of sufficient funding, lack of clear objectives and reliable data systems. Since a majority of APEC economies are still on the developing status, our findings suggest that they should focus on the above aspects to improve over the food loss and waste problems.

## Appendix A: Questionnaire

### APEC Food losses and Waste Reduction Policy Inventory Survey (APEC Multi-Year Project: M SCE 02 2013A)

<b>APEC Economy</b>	
<b>Respondent's Information</b>	<b>Name:</b>
	<b>Position:</b>
	<b>Agency:</b>
	<b>Email (if available):</b>

#### I. Basic Information:

**1.1 Is there any data collecting/accounting/statistics system for tracking and reporting of food losses and waste along the food chain in your economy?**

YES                       NO                       Don't Know

If "YES", please provide the agencies/organizations and legislations (*Add more rows if needed*)

<b>Name of the data collecting/ accounting/statistic system</b>	<b>Agencies in charge (public or private)</b>	<b>Legislations (if applicable)</b>	<b>Year Enacted</b>
<u>1.</u>			
<u>2.</u>			
<u>3.</u>			

**1.2 What are the major sources and quantities of the "edible" food losses and waste along the food chain from harvest to consumption in your economy? (Add more rows if needed)**

<b>Major Sources</b>	<b>Quantities (if available)</b>		
	<b>Unit</b>	<b>Amount (total or per capita)</b>	<b>Year</b>
<u>1.</u>			
<u>2.</u>			
<u>3.</u>			

**1.3 Which agencies/organizations (including NGOs and NPOs) are engaged in the reduction, recovery, reuse or disposition for “edible” food losses/waste (e.g. food bank, foreign aid, feed, biomass, organic compose, ..., etc.), and what are their roles and main activities?**

Agencies/Organizations	Roles	Main Activities
<u>1.</u>		
<u>2.</u>		
<u>3.</u>		

## **II. Existing Food losses and Waste Reduction Programs/Initiatives/Action Plans**

**2.1 Does your economy have any government programs/projects or action plans (e.g., cold chain investment, financing, consumer education, employee training, date labeling, IT tracking, food donation, ... etc.) for promoting or implementing food losses and waste reduction in food chain?**

YES       NO       Don't Know

**If “YES”, please provide 3~5 most important programs/projects or action plans and fill out the detailed information as much as applicable:**

	Name of Program/Project or Action Plan	Detailed Implementation Information					
		Year launched	Location	Agency	Private partners	Main Activities	Expected Outcome
<u>1.</u>							
<u>2.</u>							
<u>3.</u>							

**2.2 How do you rate these program/project in terms of food losses and waste reduction efforts?**

**Scale: (1= very good, 2= good, 3= neutral, 4= poor, 5= very poor)**

Area	Rating					Comments
1. Infrastructure investment	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
2. Availability of food losses and waste data	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
3. Consumer awareness	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
4. Access to capital	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
5. Access to technology	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	
6. Access to capacity building or training	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5	

**2.3 In your opinion, for a successful implementation of food loss/waste reduction programs, are the following factors strengths or weaknesses in your economy?**

Items	Weakness	Neutral	Strength
1. Clear directive and active involvement from policymakers or senior officials	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Thorough planning before implementation and establishment of an SOP or process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Effective communication with beneficiaries of constituents and stakeholders	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Broad consultation with experts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Human resource capacity building, training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Sufficient funding / financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Sufficient infrastructure support / investment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Adequate and effective use of innovative technologies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Monitoring and evaluation of outcomes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Other (please specify)			

**II. Implementation of the Existing Programs/Initiatives/Action Plans**

**3.1 Considering the reduction target of 10% food losses and waste in comparison to 2011-12 levels as proposed by the “APEC Food Security Roadmap Towards 2020”, how likely will it be to reach the target in your economy?**

Scale: 1. very likely    2. likely    3. Neutral    4. unlikely  
5. extremely unlikely

**Additional comments:**

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**3.2 What is your recommendation to support the implementation of these programs/initiatives?**



Type	Recommendations / Suggestions
1. Financial and/or tax Incentives	
2. Inter-governmental coordination	
3. Public-Private Partnership assurance	
4. Date labeling and food standards refinement	
5. Experience sharing and technology transfer	
6. Other (please specify)	

**3.3 What are the major barriers to successfully reduce 10% food losses and waste by 2020 in your economy? Please rank them in terms of being a very major to very minor barrier.**

Items	Very major	Major	Neutral	Minor	Very minor
1. Poor planning or insufficient funding/resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Lack of a food loss/waste standard or lack of reliable data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Lack of clear objectives or mandates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Lack of accountability/interest by the government	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Lack of interest from consumers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Lack of technology or infrastructure (incl. water, electricity)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Cultural issues	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Other (please specify)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**3.4 Are there any Food Waste Law or Act that provide immunity from liability of food donors or protection for food reuse from being sued in the event of consumer sickness in your economy?**

YES       NO       Don't Know

**If "YES", please provide detailed information as much as possible:**

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**3.5 Are there any innovative technologies or best practices on prevention, reduction, recovery, recycling of food losses and waste you believe would help support the implementation?**

YES       NO       Don't Know

**If "YES", please provide detailed information as much as possible:**

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**3.6 Are there any capacity building needed to increase the adoption of innovative technologies or best practices to support the implementation in your economy?**

YES       NO       Don't Know

**If "YES", please provide detailed information as much as possible:**

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## Appendix B: Answers from Open Questions

**Question: What is your recommendation to support the implementation of these programs/initiatives?**

### I. Financial and/or tax Incentives

- **Chile:** To put a tax to the supermarket that waste food.
- **Hong Kong:** Financial incentives would be a good initiative.
- **Indonesia:** Provide Tax incentives to the farmer who can reduce the rice losses.
- **Japan:** Company reduced FLW can get a lower interest loan for further productivity improvement or pay a lower tax. The consumers should pay for disposing garbage in their home and leftovers in the restaurants.
- **Malaysia:** Commitment from government.
- **Mexico:** Promote more tax incentives.
- **New Zealand:** Maybe.
- **Peru:** Goal setting; To create a Stimulus Fund.
- **Philippines:** Passing a law to reduce tax of food establishments that donate food or money to feeding programs run by charitable institutions.
- **Russia:** Among the major sources – voluntary contributions, however the support of the government is also important.
- **Thailand:** Soft loan or low interest loan for infrastructure and equipment provision.
- **United States:** Tax benefits to food donors has been instrumental in incentivizing donation of wholesome, otherwise wasted food and development of food recovery services.
- **Vietnam:** Interest support or tax reduction for domestic innovations; Revise financial mechanisms to help enterprises access to financial sources to improve.

### II. Inter-governmental coordination

- **Chile:** Create a public-private inter-governmental entity such as a National Commission for the Reduction and Prevention of food waste.
- **Indonesia:** Develop effective communication inter –governmental.
- **Japan:** At least, the definition of FLW, the measurement method of FLW, and the definition of reduction & recycling should be adjusted in each country.

- **Malaysia:** A network to be formed.
- **Mexico:** Set clear goals in each agency.
- **New Zealand:** Yes.
- **Peru:** To form or strengthen working groups with a territorial approach.
- **Philippines:** Those government agencies mentioned above should create a cohesive program addressing food losses in the country.
- **Russia:** To attract the representatives of charity funds and non-governmental organizations, to provide state support.
- **Thailand:** International workshop and conference for mutual cooperation and networking.
- **United States:** USDA and EPA coordination has been critical in spurring action to reduce FLW in the United States.
- **Vietnam:** Exchange innovation between countries, especially countries under similar climate system, so easy to apply similar technologies.

### **III. Public-Private Partnership assurance**

- **Chile:** Create a public-private inter-governmental entity such as a National Commission for the Reduction and Prevention of food waste; Developed projects with the participation of public-private stakeholder's; Develop a pilot projects with the participation of public-private stakeholder's.
- **Indonesia:** Increasing Multi-stakeholders partnership.
- **Malaysia:** A network to be formed.
- **New Zealand:** Yes.
- **Peru:** To form or strengthen tax works program.
- **Philippines:** Government setting up the guidelines in the collection, storage and distribution of edible food donated by businesses to food banks and businesses shouldering the cost of sending these foods to food banks.
- **Russia:** To create the new system of waste treatment, to attract private investments and new technologies for cycling of waste.
- **Thailand:** Establish the policy to collaborate with private sector and setup PR center to inform how to reduce food loss and food waste nationwide.
- **United States:** The public-private partnership Further with Food has brought together the main FLW reduction advocates in the United States and has been important in better coordinating our efforts.
- **Vietnam:** Creating and forecasting demand helps suppliers towards efficient supply along the food chain and market system; Joining a collective or cooperative initiative and creating scale makes investments in the food value chain more attractive for farmers in order to make profit; Sharing the role

among government and private partners in managing food supply chain; Cooperating and linking among agricultural extension staff in improving production skills of farmers.

#### **IV. Date labeling and food standards refinement**

- **Chile:** To add in the labeling information about the correct use and storage of the products to avoid the food waste; To add in the labeling o packaging recommendation about “adequate portion” for person to avoid the waste of food (measuring/indication of portion per person).
- **Hong Kong:** Enhanced food labeling standard is also recommended to reduce edible food loss.
- **Indonesia:** Arrangement date labeling and food standard refinement.
- **Japan:** Changing display from expiration date to expiration month.
- **New Zealand:** Maybe.
- **Peru:** Suggestion to include on the label motivational phrases, e. g.: "consume soon, avoid waste".
- **Philippines:** Consumers should be kept aware and informed regarding the importance and principles of date labeling and food standards. They should be the driving force in the full implementation of these programs. They should know their rights and claim it.
- **Russia:** To adopt the coordinated strategy on introduction of standards, standardization and interpretation of labeling with dates for consumers (in order to increase their awareness about products).
- **Singapore:** To engage food industry / supply chain stakeholders.
- **Thailand:** Establish the policy to collaborate with private sector and setup PR center to inform how to reduce food loss and food waste nationwide.
- **United States:** Industry and government are working in the United States to agree on an approach for standardizing date labels to reduce consumer confusion and waste. By working together we can.
- **Vietnam:** Apply traceability system widely.

#### **V. Experience sharing and technology transfer**

- **Chile:** To identify Best Practices to avoid and reduce waste/losses food in all the productive chain and to share them among agricultures, retailers, food companies, consumers, etc.
- **Indonesia:** Conducting training, focus group discussion, and dissemination technology in the farmer level.
- **Mexico:** Establish standards and measures.

- **Peru:** Create warning systems in home appliances to avoid food waste.
- **Philippines:** APEC economies should share their best practices and best technologies to reduce food losses and waste through International Cooperation Programs and Exchanges.
- **Russia:** To share experience about the storage of waste or their recycling.
- **Singapore:** To invite experts and experienced industry personnel to share successful case studies in reducing food loss and waste through technology adoption.
- **Thailand:** Organize national seminar for experience and knowledge sharing.
- **United States:** New and innovative approaches for development of value added products from otherwise wasted food or by-products is a fun and growing sector in the US economy. USDA research has helped support development and tech transfer of FLW innovations. The Further with Food website – and the ReFED website on food innovation are key platforms for experience sharing.
- **Vietnam:** Technology and knowledge transfer, together with ICT solutions and entrepreneur skill development

#### VI. Others:

- **Chile:** To redefine quality food parameters to open new routes to sale “ugly” fruits and vegetables or food that no fulfill the retails parameters; To inform and create awareness among consumers about the use of “ugly” food vegetables or food that no fulfill the retails parameters; To sale products that are normally sale only for unit, by weight. For example, watermelons; To support the short circuits of sales (from the producer to the consumer); To support and promote the local market; To pass by laws that prohibited the waste of food; To work with teachers and students of public school to prevent food waste and to raise awareness of the problem.
- **Mexico:** To generate technological transfer platforms.
- **Vietnam:** The region needs a food secure alliance to make food production more efficient and the use of land and resources less demanding for our climate; To make the food value chain work from the producer through the wholesale market to the end market, every link in the chain has to be in place and work in synchronization; Coordination between actors in the supply chain is key to reduce food loss along the food value chain. The region has to look at how to connect the players in the supply chain; Improve food value chain’s stakeholders awareness of food loss reduction; Shorten supply chain to reduce distance from farm to fork.