



APEC多年期計畫成果回顧 與研討會成果分享

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1. 計畫背景_1

APEC 多年期計畫

目的

- 確認降低糧食損失與浪費之關鍵議題
- 尋求公私夥伴關係之最佳範例
- 尋找解決實用解決方案與促進能力建構

工作項目 (2013-2018)



1. 計畫背景_2

APEC多年期計畫內容

3 Pillars



- ✓ 2013年：穀類之糧損
- ✓ 2014年：蔬菜與水果類之糧損
- ✓ 2015年：水產與家畜類之糧損
- ✓ 2016年：消費端之糧損
- ✓ 2017年：無悔策略
- ✓ 2018年：公私夥伴關係

2. 2015-2018年執行項目與成果 (總匯)

2015	2016	2017	2018
<ul style="list-style-type: none"> • 建立漁畜糧損評估方法論 	<ul style="list-style-type: none"> • 建立零售與消費端糧食浪費評估方法論 	<ul style="list-style-type: none"> • 組成跨國零售與消費端糧損評估專家小組 	<ul style="list-style-type: none"> • 完成「糧損評估方法論成果報告」、「糧食供應鏈評估糧損及浪費實用指南」、「APEC降低糧損行動方案建議」
<ul style="list-style-type: none"> • 辦理漁畜之降低糧損能力建構研討會 	<ul style="list-style-type: none"> • 辦理降低零售與消費端糧食浪費能力建構研討會 	<ul style="list-style-type: none"> • 舉辦「2017APEC降低糧損與浪費專家諮詢會議」 	<ul style="list-style-type: none"> • 辦理「專家工作會議」
<ul style="list-style-type: none"> • 充實多年期計畫網站 	<ul style="list-style-type: none"> • 持續充實多年期計畫網站 	<ul style="list-style-type: none"> • 召開「2017APEC降低糧損與永續糧食體系能力建構研討會」 	<ul style="list-style-type: none"> • 協助辦理「APEC降低糧損與食物浪費高階政策對話論壇」
		<ul style="list-style-type: none"> • 提出「APEC邁向2020糧食安全路徑圖」 	<ul style="list-style-type: none"> • 辦理「計畫成果發表會」
		<ul style="list-style-type: none"> • 執行「APEC國家降低糧損與浪費之政策盤點調查」 	<ul style="list-style-type: none"> • 執行「降低糧損與浪費之可行性策略調查」
		<ul style="list-style-type: none"> • 持續充實多年期計畫網站 	<ul style="list-style-type: none"> • 持續充實多年期計畫網站

3. 糧損評估方法與定義

方法論：

- FAO的質流模型
- 測量食物供應鏈下，不同階段所造成的糧食損失。

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

生產鏈階段	糧食損失與食物浪費的五種類型
農業生產	農產品在農場生產時或剛離開農場，因農業生產工具不夠精良所造成之農業生產時糧食損失，而水果與漁獲也可能因不符合經濟效益或沒達到消費者要求品質而被丟棄，造成糧食損失及浪費。
處理與儲存	農產品離開農場後之處理、運送、儲藏等階段糧食農業生產及儲存時遭遇到病蟲害的攻擊而產生之損失。
加工與包裝	食物的加工或是食品的包裝階段在加工及包裝過程中可能因糧食本身品質而導致無法加工之損失，如不新鮮的魚貨與牛奶、未達標準的水果。加工過程中也會因缺乏良好設備而造成糧食之損失及浪費。
分配與行銷	在批發以及零售分配階段的損失。糧食的損失及浪費可能因產品沒達到消費者預期之外觀，抑或是超過其食用期限而遭丟棄。
消費者	指居家或餐廳消費時所產生的浪費因為未達消費者或是餐廳的食用標準而被淘汰、丟棄。

4. FAO糧食損失量計算公式 (FAO, 2011)

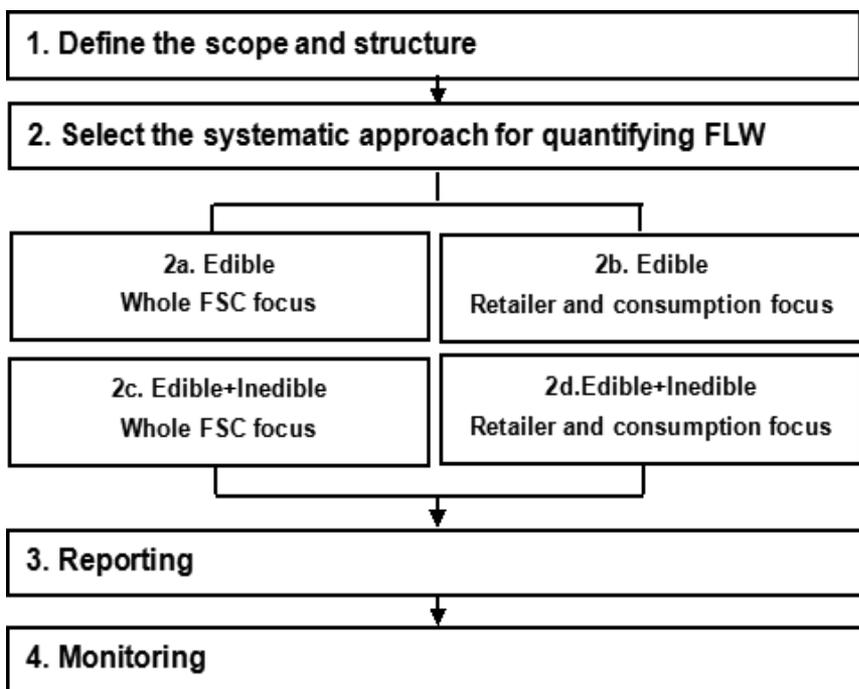
生產鏈階段	糧食損失量的計算公式
農業生產	$[(\text{生產損失率}/(1-\text{生產損失率})) * \text{生產量}]$
處理與儲存	$\text{處理及儲存損失率} * \text{生產量}$
加工與包裝	$\text{加工及包裝損失率} * [\text{糧食毛供給量} * (1-\text{供人類消費率}) + \text{加工用量}]$
分配與行銷	<p>生食品之分配與行銷損失量 + 加工品之分配與行銷損失量</p> <ul style="list-style-type: none"> ➤ 生食品之分配與行銷損失量 = 生食品之分配與行銷損失率 * 糧食毛供給量 * 供人類消費率 ➤ 加工品之分配與行銷損失量 = 加工品之分配與行銷損失率 * [(糧食毛供給量 * (1-供人類消費率) + 加工用量 - 加工及包裝階段之損失量)]
消費者	<p>生食品之消費者損失量 + 加工品之消費者損失量</p> <ul style="list-style-type: none"> ➤ 生食品之消費者損失量 = 生食品之消費者損失率 * [(糧食毛供給量 * 供人類消費率) - 生食品之分配與行銷損失量] ➤ 加工品之消費者損失量 = 加工品之消費者損失率 * [糧食毛供給量 * (1-供人類消費率) + 加工用量 - 加工及包裝階段之損失量 - 加工品之分配與行銷損失量]
可食之總糧食損失量	$(\text{生產階段之損失量} * \text{平均可食率}) + (\text{處理及儲存階段之損失量} * \text{平均可食率}) + (\text{加工及包裝階段之損失量} * \text{工業處理可食率}) + [(\text{生食品之分配與行銷階段之損失量} * \text{人工處理可食率}) + (\text{加工品之分配與行銷階段之損失量} * \text{工業處理可食率})] + [(\text{生食品之消費者階段之損失量} * \text{人工處理可食率}) + (\text{加工品之消費者階段之損失量} * \text{工業處理可食率})]$

糧損評估之流程

採用FAO的評估方法的原因：

- 其擁有明確的估計流程。
- 對無糧損數據的經濟體而言，此評估方法為成本效益之方法。

Steps for quantifying FLW at economy level



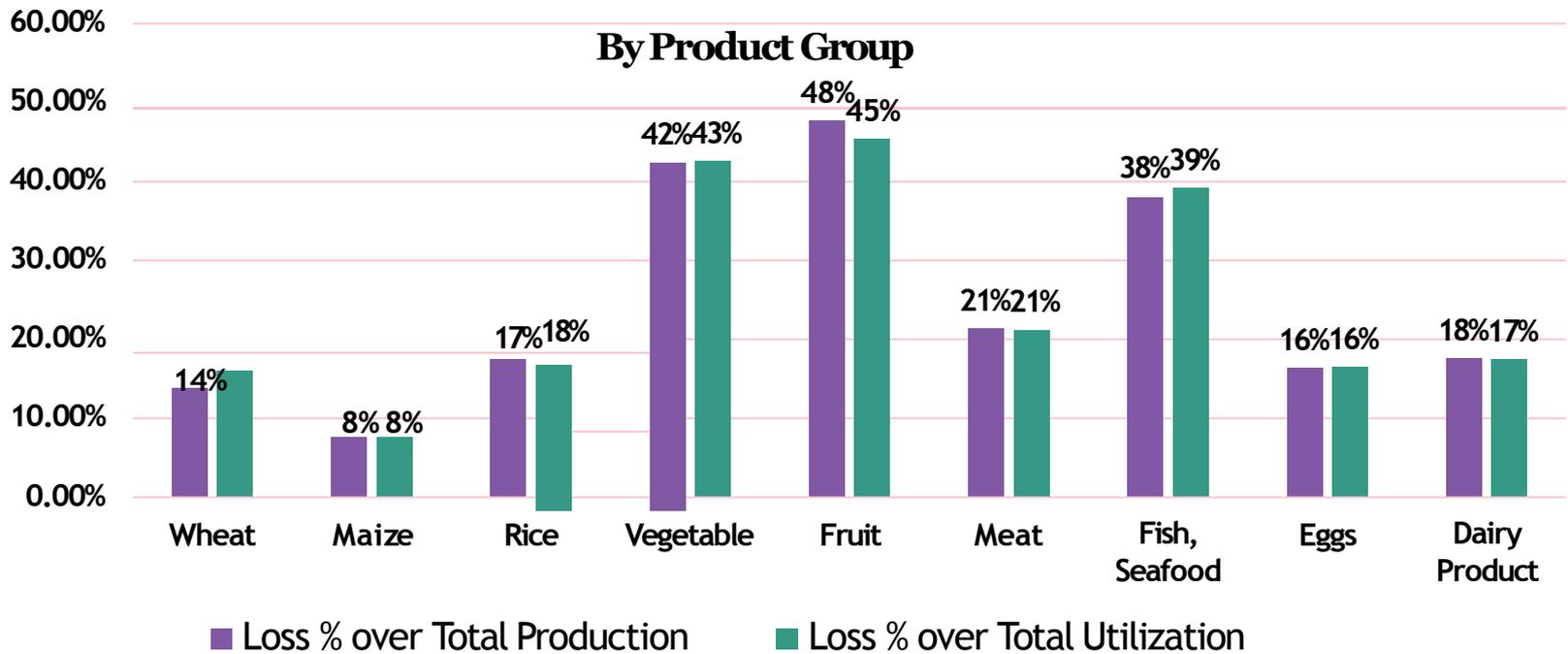
5. APEC地區糧損計算結果(2013年)_1

糧損計算結果：

- 小麥：4,092萬噸
- 玉米：4,950萬噸
- 稻米：4,745萬噸
- 蔬菜：3億噸
- 水果：1.3億噸
- 肉類：3,819萬噸
- 漁和海鮮：4,163萬噸
- 蛋類：795萬噸
- 乳製品：4,012萬噸

Unit: 1000 tonnes								
Commodity	Item	Production	Handling & Storage	Processing & Packing	Distribution	Consumption	Total	
Wheat	Losses and Waste Quantity	9,056.34	10,359.14	2,785.47	2,557.72	16,165.38	40,924.05	
	Loss Percentage in each step	22.13%	25.31%	6.81%	6.25%	39.50%	100.00%	Total Utilization
	Loss Ratio along Utilization	3.62%	4.14%	1.11%	1.02%	6.46%	16.36%	250,206.00
Maize	Losses and Waste Quantity	19,892.30	20,609.17	2,018.85	1,205.26	5,780.82	49,506.39	
	Loss Percentage in each step	40.18%	41.63%	4.08%	2.43%	11.68%	100.00%	Total Utilization
	Loss Ratio along Utilization	3.10%	3.21%	0.31%	0.19%	0.90%	7.71%	642,311.00
Rice	Losses and Waste Quantity	12,956.78	11,388.86	4,573.14	4,404.26	14,122.47	47,445.50	
	Loss Percentage in each step	27.31%	24.00%	9.64%	9.28%	29.77%	100.00%	Total Utilization
	Loss Ratio along Utilization	5.08%	4.46%	1.79%	1.73%	5.54%	18.60%	225,125.00
Vegetable	Losses and Waste Quantity	102,244.92	47,925.46	71,500.47	42,696.09	44,187.27	308,554.22	
	Loss Percentage in each step	33.14%	15.53%	23.17%	13.84%	14.32%	100.00%	Total Utilization
	Loss Ratio along Utilization	14.25%	6.68%	9.97%	5.95%	6.16%	43.01%	717,471.00
Fruit	Losses and Waste Quantity	42,178.90	17,648.55	29,750.64	18,390.25	26,337.72	134,306.06	
	Loss Percentage in each step	31.41%	13.14%	22.15%	13.69%	19.61%	100.00%	Total Utilization
	Loss Ratio along Utilization	14.31%	5.99%	10.09%	6.24%	8.93%	45.56%	294,802.00
Meat	Losses and Waste Quantity	3,376.52	659.17	6,734.20	10,345.64	17,076.63	38,192.16	
	Loss Percentage in each step	8.84%	1.73%	17.63%	27.09%	44.71%	100.00%	Total Utilization
	Loss Percentage in each step	1.87%	0.36%	3.72%	5.72%	9.44%	21.12%	180,861.00
Fish, Seafood	Losses and Waste Quantity	6,277.23	3,744.19	5,940.86	11,452.82	14,218.29	41,633.40	
	Loss Percentage in each step	15.08%	8.99%	14.27%	27.51%	34.15%	100.00%	Total Utilization
	Loss Ratio along Utilization	5.73%	3.42%	5.42%	10.46%	12.98%	38.02%	109,512.00
Eggs	Losses and Waste Quantity	2,930.59	0.00	175.87	1,574.42	3,272.57	7,953.45	
	Loss Percentage in each step	36.85%	0.00%	2.21%	19.80%	41.15%	100.00%	Total Utilization
	Loss Ratio along Utilization	6.02%	0.00%	0.36%	3.23%	6.72%	16.33%	48,719.00
Milk	Losses and Waste Quantity	8,285.64	2,374.14	2,177.33	3,426.77	23,863.92	40,127.80	
	Loss Percentage in each step	20.65%	5.92%	5.43%	8.54%	59.47%	100.00%	Total Utilization
	Loss Ratio along Utilization	3.52%	1.01%	0.92%	1.46%	10.13%	17.04%	235,483.00
Total	Losses and Waste Quantity	207,199.23	114,708.67	125,656.82	96,053.23	165,025.06	708,643.02	

5. APEC地區糧損計算結果(2013年)_2



6. 研討會與專家會議

➤ 2015年

- APEC強化公私部門夥伴關係降低漁畜供應鏈之糧食損失損研討會
- APEC專家諮詢會議
- 專家工作會議

➤ 2016年

- APEC零售與消費端糧食損失與浪費專家諮詢會議
- APEC強化公私部門夥伴關係降低零售與消費端糧食浪費研討會
- 專家工作會議

➤ 2017年

- APEC降低糧食損失與浪費專家諮詢會議
- APEC降低糧損與永續糧食體系能力建構研討會

➤ 2018年

- APEC降低糧損與實務浪費高階政策對話論壇
- APEC專家工作會議

2015年： APEC強化公私部門夥伴關係降低漁畜供應鏈之糧食損失損研討會

- ✓ 舉辦日期：2015/09/28-29
- ✓ 舉辦地點：Iloilo Convention Center (菲律賓)
- ✓ 本次會議共有**68位**專家學者出席。
- ✓ 成果：
 - ✓ 與會者互相交流與分享最佳範例、創新技術等知識。
 - ✓ 經由分組討論產生政策建議。
 - ✓ 建議各經濟體相互合作並深入探討。
 - ✓ 建議各經濟體要鼓勵最佳範例的企業推廣與能力培訓。



2015年： APEC專家諮詢會議

✓ 舉辦日期：2015/7/16-17

✓ 舉辦地點：國立臺灣大學管理學院一號館

✓ 成果：

✓ 共分成7個場次進行。

✓ 出席人數達50人，含14個會員國。

✓ 跨越4個工作小組與論壇：ATCWG, OFWG, PPFS, ABAC。

✓ 我國將組織一個具有相關統計或數據收集經驗的技術團隊。

邀請專家之簡介

第一場: Assessment Methodology: Scope, Definition and Measurement

1. Ms. Staci Rijal



International Affairs Specialist,
NOAA Office of International Affairs,
United States of America

2. Dr. James Morton



Professor,
Department of Wine, Food, and Molecular
Biosciences,
Lincoln University,
New Zealand

第二場: Data Collection and Gaps/Improvements

3. Dr. Jung-Hee Cho



Director,
Fisheries Resources Research Department,
Korea Maritime Institute,
Republic of Korea

University.

4. Dr. Ching-Cheng Chang



Research Fellow and Professor,
Institute of Economics, Academia Sinica,
Department of Agricultural Economics, National
Taiwan University,
Chinese Taipei

第四場: Survey Design and Implementation

5. Dr. Don Gunasekera



Industry Researcher,
Institute for Supply Chain and Logistics,
Victoria University,
Australia
Email: don.gunasekera@vu.edu.au

6. Dr. Sarun Wattanutchariya



Professor,
Department of Agricultural and Resource Economics,
Faculty of Economics,
Kasetsart University,
Thailand
Email: sarun_wat@hotmail.com

2015年： 專家工作會議

➤ 第一次國內專家團隊工作會議

➤ 時間：2015/04/30

➤ 地點：國立臺灣大學農業綜合館一樓農經研討室

➤ 討論事項：漁畜評估方法論、降低糧損工具箱。

➤ 第二次國內專家團隊工作會議

➤ 時間：2015/06/24

➤ 地點：國立臺灣大學農業綜合館二樓農經會議室

➤ 討論事項：糧損原因及解決方案調查表，漁畜供應鏈之利益關係人名單。

➤ 第三次國內專家團隊工作會議

➤ 時間：2015/08/19

➤ 地點：國立臺灣大學農業綜合館一樓農經研討室

➤ 討論事項：APEC強化公私部門夥伴關係降低漁畜供應鏈之糧食損失損研討會。

2016年： APEC零售與消費端糧食損失與浪費專家諮詢會議

- ✓ 舉辦時間：2016/07/18-19
- ✓ 舉辦地點：台北福華大飯店
- ✓ 成果：
 - ✓ 共7個場次
 - ✓ 與會者達60人，含14個經濟體代表
 - ✓ 提供各國公私部門經驗交流機會
 - ✓ 合作致力達成「APEC邁向2020糧食安全路徑圖」



2016年： APEC強化公私部門夥伴關係降低零售與消費端 糧食浪費研討會

- ✓ 舉辦時間：2016/09/22
- ✓ 舉辦地點：皮烏拉市（秘魯）
- ✓ 成果：
 - ✓ 15個經濟體代表出席
 - ✓ 邀請13位專家，與會者達70人
 - ✓ 建議使用一隻的評估方法論。
 - ✓ 建議提供投資基礎建設與技術協助。
 - ✓ 透過創新資訊科技改善食物廢棄管理與教育消費者。
 - ✓ 增加私部門投入以爭取公部門資金投入糧食損失與浪費調查。



2016年： 專家工作會議

➤ 第一次國內專家團隊工作會議

➤ 時間：2016/03/08

➤ 地點：國立臺灣大學農業綜合館一樓農經研討室

➤ 討論事項：Database的調整，工具箱的內容。

➤ 第二次國內專家團隊工作會議

➤ 時間：2015/03/16

➤ 地點：國立臺灣大學農業綜合館一樓農經研討室

➤ 討論事項：Expert Consultation與APEC Seminar事項。

➤ 第三次國內專家團隊工作會議

➤ 時間：2015/03/30

➤ 地點：國立臺灣大學農業綜合館一樓農經研討室

➤ 討論事項：Expert Consultation事項，調查問卷與FAO糧食平衡表之更新。

2017年： APEC降低糧食損失與浪費專家諮詢會議

- ✓ 舉辦時間：2017/06/12-13
- ✓ 舉辦地點：國立臺灣大學
- ✓ 成果：
 - ✓ 共有8個場次
 - ✓ 16個經濟體代表出席，與會人數達70人
 - ✓ 建議使用FAO高階專家報告的三種觀點切入。
 - ✓ 建議參考ReFED，並研議各種無悔策略。
 - ✓ 透過問卷調查，發現亞太地區糧食損失與浪費的主要障礙：科技技術、消費者的意願、缺乏資料與明確目標。



2017年： APEC降低糧損與永續糧食體系能力建構研討會

- ✓ 舉辦時間：2017/08/19
- ✓ 舉辦地點：越南芹苴市
- ✓ 成果：
 - ✓ 共有5個場次
 - ✓ 12個經濟體代表出席
 - ✓ 國內外專家共14位，與會人數達60人
 - ✓ 預計明年制定APEC地區糧食損失與浪費評量指導手冊。
 - ✓ 研擬ATCWG降低糧損第2階段多年期計畫。
 - ✓ 獲得越南芹苴大學支持，未來可在該校建立減少糧損科研中心。



2018年： APEC降低糧損與實務浪費高階政策對話論壇



✓ 舉辦時間：2018/06/14-15

✓ 舉辦地點：台北福華大飯店

✓ 成果：

✓ 共有7個場次

✓ 21位專家，15個經濟體代表，與會人數達110人

✓ 建議擴充足夠的數據。

✓ 利用這些數據來推動更多的政府投資與參與。

✓ 擴大政府投資使公部門與私人進行對話與合作。

✓ 需要跨部門、跨學科和跨專業知識來解決問題。

7. 出版品

- 糧損評估方法論成果報告
- 糧食供應鏈評估糧損及浪費實用指南與APEC降低糧損行動方案建議
- APEC國家降低糧損與浪費之政策盤點調查
- 降低糧損與浪費之可行性策略調查

糧損評估方法論成果報告

✓ 內容包含：

- ✓ APEC降低糧損之相關活動與資訊。
- ✓ APEC各經濟體執行降低糧損相關活動與資訊。
- ✓ APEC於降低糧損之建議。

Summary of Activities, Findings and Recommendations from the APEC High Level Policy Dialogue on Enhancing Public and Private Partnership to Reduce Food Losses and Waste for a Sustainable APEC Food System

(Draft Version 6, July 23, 2018)

1. We, the high level representatives of APEC member economies in attendance at the APEC High Level Policy Dialogue on Enhancing Public and Private Partnership to Reduce Food Losses and Waste for a Sustainable APEC Food System, held in Taipei from June 14 to 15, 2018, acknowledging the urgent need to reduce food losses and waste (FLW) in the supply chain to achieve food security and a sustainable food system, hereby: (I) recognize the activities conducted under APEC Multi-Year Project APEC MYP SCE 02 2013A to reduce FLW; (II) summarize the findings of these activities; and (III) encourage APEC member economies to adopt the following recommendations derived from these activities and findings, as listed in the corresponding sections below.¹
2. We recognize that APEC economies face food security challenges arising from population growth, rapid urbanization, changes in diet, natural resource constraints, inequality in income and resource distribution, and climate change.²
3. We acknowledge that up to one-third, or approximately 1.3 billion tons, of food produced for human consumption each year is lost or wasted along the supply chain, representing enough food to feed the estimated 1 billion people around the world that are food insecure, and resulting in the waste of labor, water, energy, land and other resources used in producing that food.¹
4. We reaffirm that the reduction of food losses and waste can strengthen food security and support the attainment of a sustainable food system.²
5. We take note of UN Sustainable Development Goals (SDGs) Target 12.3, which calls on governments, the private sector and individuals to, “[b]y 2030, halve per capita global food waste at the retail and consumer levels and reduce food losses along production and supply chains, including post-harvest losses.”²
6. We recognize that the issue of FLW can best be addressed from three perspectives: “a systemic perspective; a sustainability perspective, including the environmental, social and economic dimensions of sustainability; and a food security and nutrition perspective, looking at how food losses and waste relate to the various dimensions of food security and nutrition.”²
7. We emphasize that, under the APEC Food Security Roadmap Towards 2020,

¹ Statistics by United Nations Food and Agriculture Organization (FAO)...

² HLPE, 2014. Food losses and waste in the context of sustainable food systems. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome 2014...

糧食供應鏈評估糧損及浪費實用指南與 APEC降低糧損行動方案建議

目的：

- ✓ 供各經濟體可自行評估該國的糧損狀況與改善
- ✓ 回顧糧損的定義與評量方法
- ✓ 提供亞太地區不同農產品類別的降低糧損個案

內容包含：

1. 背景介紹：

- ✓ 「APEC邁向2020糧食安全路徑圖」：2020年前達到降低10%糧損的目標。

2. 定義：

- ✓ 聯合國糧食及農業組織(FAO)：糧食安全與營養高級專家小組(HLPE)
- ✓ 美國：美國農業部(USDA)與美國環境保護局(US EPA)
- ✓ 歐盟：FUSIONS計畫



A Food Loss and Waste Quantification Handbook for APEC Economies

(Version 3.0, 06/22/2018)

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

May 2018

內容也包含：降低10%糧損之定義

“COMPARED TO WHAT?”
WINSTON CHURCHILL, WHEN ONCE ASKED, “HOW’S YOUR WIFE?”

10%

“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 (以2012年作為基礎)”

“It is an average for all economies. Specific indicator can be developed based on each economy’s situation.”

- 基於各經濟體彼此有所差異，因此可直接食用與不可直接食用之糧食規範取決於各經濟體。
- 我們鼓勵各經濟體自行定義糧損並評估該國之糧損，以改善狀況。



VS



X Ranking

X Aggregation

APEC國家降低糧損與浪費之政策盤點調查

- ✓ 內容包含：
- ✓ 調查背景資訊
- ✓ 方法
- ✓ 調查結果



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

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

September 2017

降低糧損與浪費之可行性策略調查

✓ 內容包含：

- ✓ 調查背景資訊
- ✓ 方法
- ✓ 調查結果



Asia-Pacific
Economic Cooperation

APEC Survey Report on No-regret Solutions for Food Loss and Waste Reduction

(Version 4, 06/21/2018)

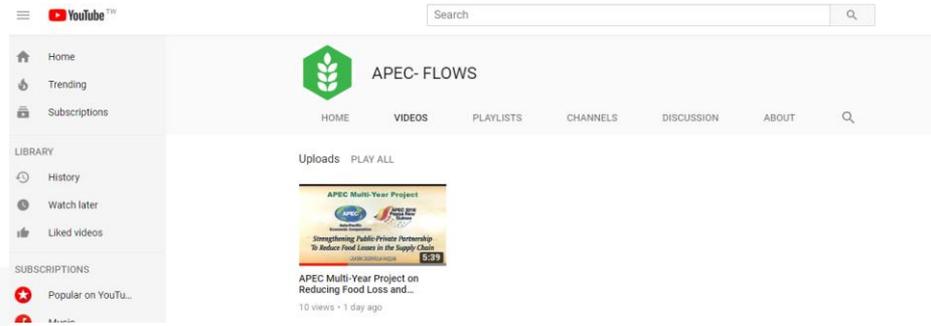
Agricultural Technical Cooperation Working Group (ATCWG)
Policy Partnership of Food Security (PPFS)

June 2018

8. 多年期計畫網站之更新

- APEC-FLOWS 頁面更新
- 工具箱資料庫更新

APEC-FLOWS



目標：

- 共享糧損評量方法數據等資訊。
- 提供降低糧損之工具箱與最佳範例。
- 協助各經濟體的能力建構，以實踐2020年減少10%糧損之目標。

網址：<http://apec-flows.ntu.edu.tw/>

改版網頁：<http://61.63.232.42:38131/>

電子報：<http://61.63.232.42:38131/newsletter.html>

影片：https://www.youtube.com/channel/UC16yKySba6U4kXGJIKIW03g?view_as=subscriber



Welcome to APEC-FLOWS!

Asia-Pacific Economic Cooperation (APEC) Project on Food Loss and Waste System (APEC-FLOWS) is an information platform to share food loss and waste (FLW) measurement method and database, toolkits and best practices on FLW reduction, and support capacity building needs of APEC member economies.

NEWS



WASTE NOT, WANT NOT ... WAIT? Re-assessing how much food we throw out.

In the world of food, getting there is, as with any other, a building out of lost events, traps, and a reality.

EVENTS

2017 APEC Capacity Building Workshop on Food Losses and Waste Reduction for a Sustainable APEC Food System

APEC has taken a leading step to reduce food loss and waste by supporting a multiple-stage research and

[Read More...](#)



APEC-FLOWS GOAL

Reducing food losses and waste (FLW) is an urgent issue around the world and in Asia Pacific Region. Although the assets from 12 global economies in the Asia Pacific Region are plentiful, with considerable agricultural and fisheries production, the Food and Agriculture Organization of the United Nations (FAO) estimates that nearly one-third of food produced for human consumption gets lost or wasted globally. This amounts to approximately 1.3 billion tons per year.

As specified in the APEC Food Security Roadmap towards 2025 (APEC-CSR, 2014), "APEC economies will strive to reduce FLW by 10% compared with 2011 levels by 2020 in the Asia Pacific Economic Area, and to advance beyond the Millennium Development Goals 2015+ target goals".

APEC Project on Food Losses and Waste System (APEC-FLOWS) is a platform to share

1 Information on FLW measurement method and database

2 Toolkits and best practices to reduce FLW

APEC FLOWS receives contributions from 12 member economies (the list of member economies is attached 100-103) - strengthening public-private partnership of APEC member economies in the Asia Pacific Region.

3 Support capacity building needs of APEC member economies on FLW reduction based on APEC goal 10% FLW reduction by 2020

APEC Multi-Year Project

APEC 2018 Food Loss & Waste System

Strengthening Public-Private Partnership To Reduce Food Losses in the Supply Chain

APEC/2018/09/09/09

APEC MEMBER ECONOMIES MAP



- Australia
 - Brunei Darussalam
 - Canada
 - Chile
 - China
 - Hong Kong, China
- Indonesia
 - Japan
 - Republic of Korea
 - Malaysia
 - Mexico
 - New Zealand
- Paper Tiger Group
 - Peru
 - Philippines
 - Russia
 - Singapore
 - Taiwan/Taiwan
- Thailand
 - India
 - Viet Nam

[Download](#)

[BACK TO TOP](#)

APEC-FLOWS 頁面更新

APEC MEMBER ECONOMIES MAP



01

Australia

- Population (thousand people)
- GDP (billion current US\$)
- GDP per capita (current US\$)
- CO2 emissions (metric tons per capita)
- Global Food Security Index
- Food Loss and Waste (1,000 tons/year)
- FLW per capita (kgs/person/year)



2007	20,827.60	851.96	40,905.47	17.87	6,347.10	304.74
2008	21,249.20	1,052.58	49,535.26	18.16	6,872.92	323.44
2009	21,691.70	926.45	42,709.80	18.20	6,780.96	312.61
2010	22,031.75	1,144.26	51,936.89	17.74	82.10	6,861.60
2011	22,340.02	1,394.28	62,411.79	17.54	81.40	6,981.89
2012	22,742.48	1,543.41	67,864.69	17.07		7,037.99
2013	23,145.90	1,573.70	67,990.29	16.08		7,110.57
2017	24,598.93	1,323.42	53,799.94			307.21

[FLW reduction policy: The Australian Government's National Food Waste Strategy, launched on 20 November 2017.](#)
FLW center

- Chile
- China
- Hong Kong, China
- Malaysia
- Mexico
- New Zealand
- Russian
- Singapore
- Chinese Taipei

[Download](#)



APEC Multi-Year Project

The APEC Multi-Year Project (M SCE 02 2013A) - Strengthening Public-Private Partnership to Reduce Food Losses in the Supply Chain created in 2013. The content

APEC Multi-Year Project

APEC Multi-Year Project

APEC
Asia-Pacific
Economic Cooperation

APEC 2018
Papua New
Guinea

**Strengthening Public-Private Partnership
To Reduce Food Losses in the Supply Chain**

APEC Multi-Year Project

2014 on macro-level driver
2017 on industry-level
2018 on A FLW Quantification Handbook for APEC Economies

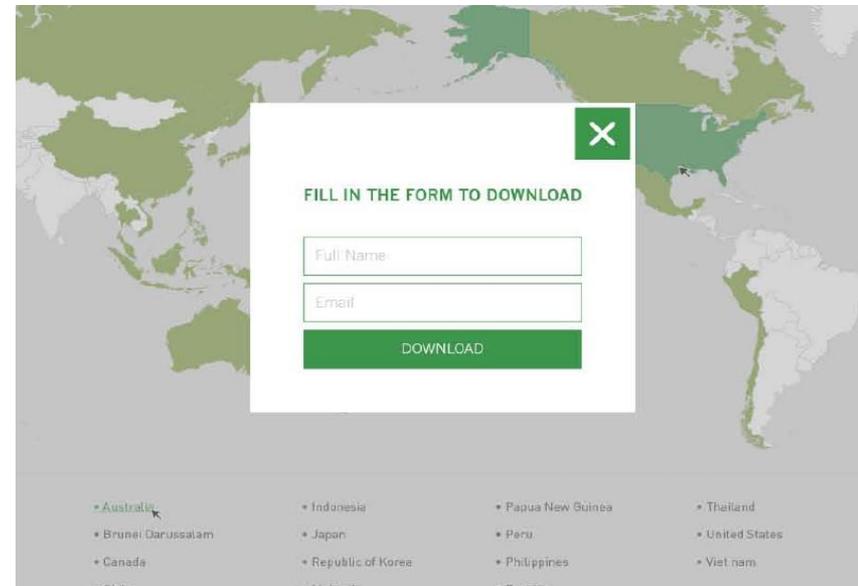
2013 on cereal crops
2014 on fruit and vegetables
2015 on fishery and livestock
2016 on retail/consumer waste
2017 on reduction policies
2018 on high level policy dialogue

2014 on crop sector
2015 on fishery and livestock
2016 on food waste
2017 on policies and PPP

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改版之內容：

1. 新增亞太地區之地圖
2. 新增APEC各經濟體之糧損
3. 新增APEC多年期計畫之影片
4. 新增電子報
5. 新增訂閱系統
6. 新增下載資料需填寫簡略個資



工具箱資料庫更新

Packaged salad in Fresh Express ↴

Product Type: Vegetables – Packaged salad ↴

Stage: Processing & Packaging, Handling & Storage ↴

Problem: ↴

The U.S. Department of Agriculture reported that American families wasted up to 44% of the vegetables. Fresh lettuce tends to spoil and did not travel well. In addition, customer's impediment to consuming salads is the effort related to cutting and washing, especially the waste of lettuce head. ↴



- 2015年增加25筆。
- 2016年增加21筆。
- 2017年增加15筆。
- 2018年至少增加10筆。
- 總計：至少71筆資料。

Beef Products Inc. ↴

Product Type: Livestock – Beef ↴

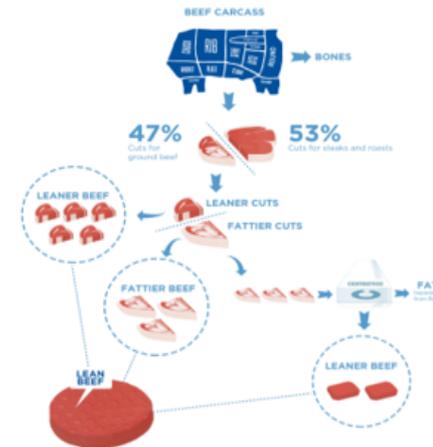
Stage: Processing & Packaging, Handling & Storage ↴

Problem: ↴

In beef production, a typical live steer weighs about 1,300 pounds generates roughly 850 pounds usable meat and bone after the carcass is dressed. We normally consume beef as beef stake. However, only about 20 percent of the dressed carcass is comprised of steaks. The other 80 percent are cuts like roasts, ribs, and flanks. Consequently, almost half the carcass finally winds up as ground beef. ↴

Ground beef is often made by beef trimmings which are left after the trimming process. However, some beef trimmings are too fatty to be of much use in the process, particularly as consumers have come to demand leaner ground beef in recent decades. The result was that lots of perfectly edible beef was rendered useless and not eaten by humans. ↴

Solution: To make leaner ground beef from these fresh trimmings, Beef Products Inc. (BPI) developed a precision method using a specially designed centrifuge. It is similar to the process used to separate milk from cream and make low fat milk



結語

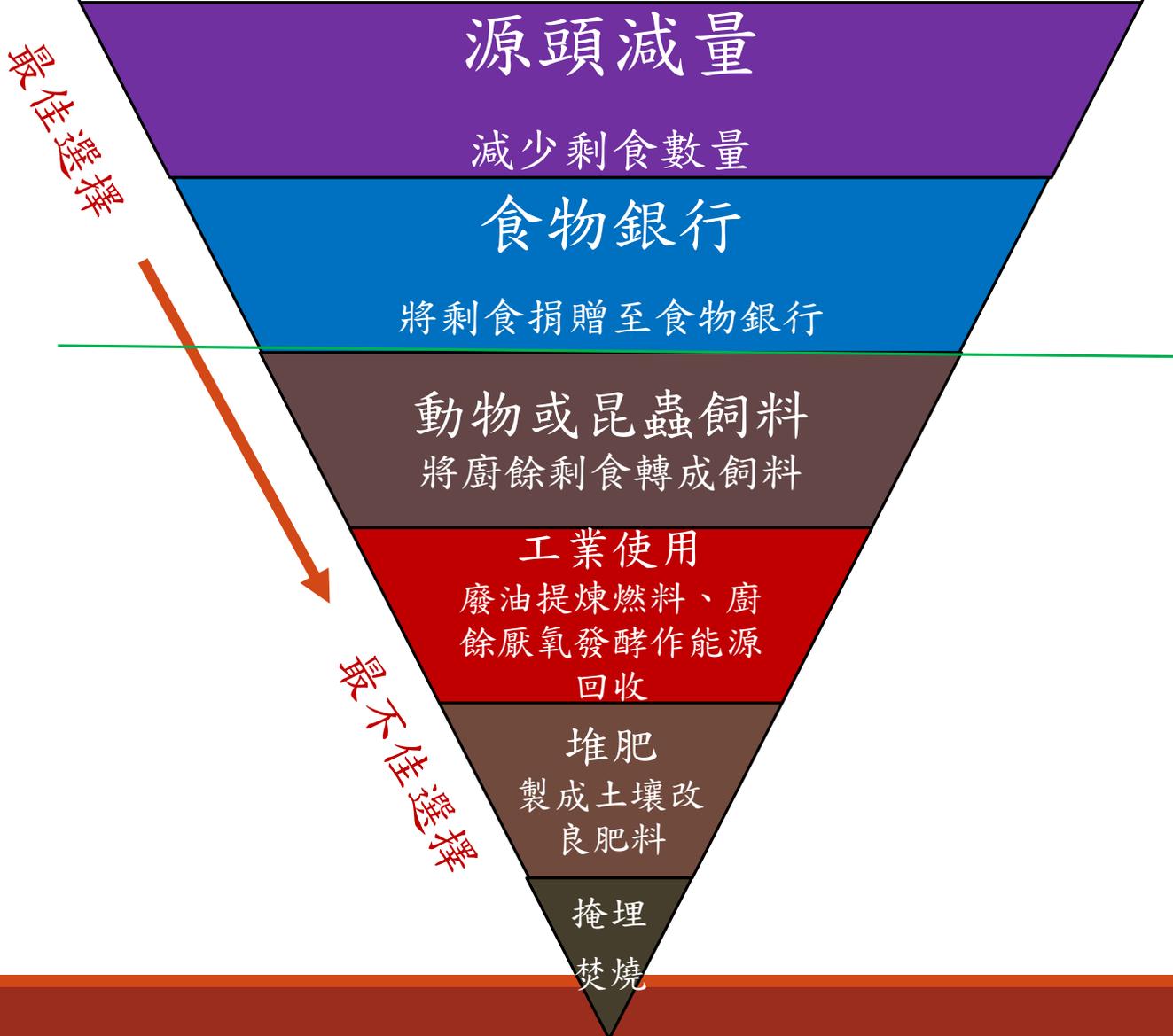
減少糧損及食物浪費的三大原則

從食農供應鏈(Food Supply Chain)或食農體系(Food System)的原則

從糧食安全的原則，以供人食用(Human consumption)為主。

從永續(Sustainable)的原則

剩食處理優先次序



第六次全國農業會議相關決議₁

與聯合國永續發展目標接軌，採納減少糧損及食物浪費亦可提高糧食安全的「減法」思維。「檢討農產品標示及研擬農產品標示法，修法區分農產品賞味期及保存期限標示，研擬生產至消費端之降低糧損措施，開發過剩食材再利用技術，減少糧食浪費。」(安全議題 第 7 條)

「推動食物銀行及農產品供應鏈結合，確保糧食處理、運輸與供貨的透明度，提高利用效率及確保食品安全。鼓勵並運用在地社區，連結在地非營利組織，兼顧高關懷族群糧食需求，增進社會福祉。」(安全議題 第 8 條)

第六次全國農業會議相關決議_2

還有，「發展農業廢棄物資源產業化，盤點農業廢棄物資源，建立廢棄物資源交易平台及獎勵措施，創造農業循環經濟產業化模式。」(永續議題 第 17條)

但美中不足處為，未將APEC 糧食安全路徑圖所設定的於二〇二〇年百分之十的具體減量目標列入，亦未前瞻性宣示於二〇三〇年達到「糧損及食物浪費減半」的聯合國永續發展目標。



感謝聆聽
歡迎指教