

臺灣主婦聯盟生活消費合作社

2018 年公益金申請計畫書

2018 年亞太地區農糧與食物倫理國際研討會-  
氣候變遷與食物的未來挑戰

2018 APSsafe Conference-  
Climate Change and Food: Challenges for the Future

申請單位  
臺灣鄉村社會學會

2018 年 1 月

## 一、計畫名稱及目的

### (一) 計畫名稱：

2018 年亞太地區農糧與食物倫理國際研討會-氣候變遷與食物的未來挑戰  
(2018 APSafe Conference-Climate Change and Food: Challenges for the Future)

### (二) 目的：

此次由臺灣大學外國語文學系教授唐格理教授代表，積極向國際組織歐洲農業暨農糧與食物倫理學會 (European Society for Agricultural and Food Ethics, EurSafe) 爭取第三屆 2018 年亞太地區農糧與食物倫理國際研討會 (2018 APSafe Conference) 之主辦權，會議訂於 2018 年 5 月 10 日至 12 日，假集思臺大會議中心舉行，預計現場將會蒞臨約 250 名國內外專家學者。本次國際會議在臺灣召開，無疑是希望帶動國內在人文與社會科學、自然科學、農業與糧食科學等實務與環保意識的落實，同時提升臺灣農業、農糧與食物倫理相關領域之發展及在國際上之研究能見度、增進國際上的發聲權，也讓臺灣與國際無縫接軌，建立在亞太地區農業與農糧與食物倫理領頭的學術地位。

於此同時，由於當今農業及糧產活動對氣候與環境造成了廣泛而多面性的影響，為避免一連串前所未有的人道災難接踵而至，立即採取行動減少農業、糧食生產活動與其他人類活動對氣候與環境的影響，是現今人們所需面對的當務之急。故依循會議開辦宗旨 (聲明詳如附件 1)，在會議中討論環境影響、氣候變遷和食物體系；糧食分配與正義；糧食安全與援助倫理；動物福利和肉產倫理；生物機械；基因改造作物；合成肉；糧食與健康；飲食管理與營養；糧食與文化等議題，期盼帶來更多在亞洲及本地的關注與檢視，並替未來環境友善、永續發展的耕作方式及革新提供所需的研究方向、革新施作技術與建議。

## 二、組織簡介

主辦組織：臺灣鄉村社會學會成立於 2000 年，主要是因應臺灣加入 WTO 可能面臨的小農經濟與家庭農場的衝擊，以及鄉村社會結構轉型和調整所成立的學會。鄉村社會學作為一門專業學科，主要的學會活動和研究結果，用為引導國家的農業與鄉村發展政策，解決農業與鄉村問題，提昇鄉村人民的生活水準，故本學會具有理論探究與實用性取向雙重價值的學術組織。此外，臺灣鄉村社會學會與國際性鄉村社會學學術團體，包括國際鄉村社會學會 (IRSA)、亞洲鄉村社會學會 (ARSA)、美國鄉村社會學會 (RSS)、歐洲鄉村社會學會 (ESRS) 均有緊密的學術交流和互動，主要成員涵蓋農業推廣與農業經濟學者所組成的學術性社團，雖然是一個非常年輕的學術社團，但在籌備多年後，已分別針對全球化與鄉村社會變遷、後現代鄉村發展、農業、食物與傳播農村社會福利與鄉村生活品質，及辦理各項學術與實務論壇。

在國際化與全球化的趨勢中生活，我國鄉村中的從農人口越來越少，城鄉的差距越來越不明顯；相對的，食物主權與分配正義，及食品安全的課題愈趨重要，故臺灣鄉村社會

學的關注焦點也因而必須有所改變與調整，在「全球性的思考」與「地方性的行動」的前提下，藉由本次農業與農糧與食物倫理的亞太研討會，形成食農教育的上層指導方針和價值理念，以因應全球化與國際化的挑戰，並進一步謀求社會消費大眾的福利，所有關心農民、農村與農業的各界人士的共同期許。

授權與合辦組織：歐洲農業暨農糧與食物倫理學會 (European Society for Agricultural and Food Ethics, EurSafe) 創立於 1999 年，由該學會主辦之歐洲農業暨農糧與食物倫理會議 (European Society for Agricultural and Food Ethics, EurSafe)，自 1999 年於荷蘭瓦赫寧恩成功舉行後，隨之在丹麥哥本哈根 (2000)、義大利佛羅倫斯 (2001)、法國土魯斯 (2003)、比利時魯汶 (2004)、挪威奧斯陸 (2006)、奧地利維也納 (2007)、英國諾丁漢 (2009)、西班牙畢爾包 (2010)、德國圖賓根 (2012)、瑞典烏普薩拉 (2013) 等全球各地，每隔一至兩年由不同國家輪流舉辦，為全球頗具指表性之重要國際會議，約有上百名來自人文與社會科學、自然科學、農業與糧食科學相關領域的專家學者，於大會中分享新的倫理觀念、知識經驗及專業技術；如今，第三屆 2018 年亞太地區農糧與食物倫理國際研討會-氣候變遷與食物的未來挑戰 (2018 APSafe Conference-Climate Change and Food: Challenges for the Future) 由 EurSafe 授權於 2018 年在臺灣舉辦，授權信詳如附件 2。

### 三、主辦及協辦單位

#### (一) 主辦單位：

臺灣鄉村社會學會、歐洲農業暨農糧與食物倫理學會

#### (二) 協辦單位：

國立臺灣大學生物產業暨傳播學系

臺灣農業推廣學會

#### (三) 指導單位：

行政院農業委員會

### 四、服務對象

本次會議廣邀國內外知名專家學參與，進行實務研究與經驗分享，希冀了解各國推動環保生態、農業/農糧與食物倫理之最新知識與技術，也開啟臺灣與國際間的專業對談，將我國進年對於人文與社會科學、自然科學、農業與糧食科學等相關發展成果推向國際。

同時，除學界外，本次會議亦邀請多位產官界專業人士（見下名單）及年輕學子與會，並於會議中，廣為安排了涵蓋環保生態、農業、農糧與食物倫理等議題之演講及討論，盼藉三天密集檢視與關注農業與農糧與食物倫理議題的各個面向，進而為更乾淨、更環

境友善的耕作方式提供所需的探究與建議。

### (一) 產官界參與名單

1. 委員 職稱
2. 王俊豪 國立臺灣大學生物產業傳播暨發展學系系主任
3. 朱增宏 (釋悟泓) 臺灣動物社會研究會執行長
4. 江慧儀 大地旅人樸門設計創辦人、臺灣樸門永續設計學會常務理事
5. 吳焜裕 立法委員、國立臺灣大學公共衛生學院職業醫學與工業衛生研究所教授
6. 李丁讚 國立清華大學社會學研究所榮譽退休教授
7. 汪中和 中央研究院地球科學研究所兼任研究員
8. 周序樺 中央研究院歐美研究所助研究員
9. 孟 磊 (P. Morehead) 大地旅人樸門設計講師、臺灣樸門永續設計學會創會理事長
10. 官大偉 國立政治大學民族學系副教授
11. 洪伯邑 國立臺灣大學地理與環境資源學系助理教授
12. 倪貴榮 國立交通大學科技法律學院科技法律研究所教授
13. 唐格理 (K. O. Thompson) 國立臺灣大學人文社會高等研究院副院長 (退休)
14. 徐世榮 國立政治大學地政學系教授兼第三部門研究中心主任
15. 張瑋琦 國立清華大學環境與文化資源學系副教授
16. 張聖琳 國立臺灣大學建築與城鄉研究所教授兼所長
17. 郭華仁 國立臺灣大學農藝學系名譽教授
18. 童元昭 國立臺灣大學人類學系副教授、國立臺灣大學原住民研究中心主任
19. 黃心雅 國立中山大學外國語文學系教授、教務長
20. 楊志彬 社區大學全國促進會秘書長
21. 蔡晏霖 國立交通大學人文社會學系暨族群與文化碩士班副教授
22. 蔡培慧 立法院立法委員
23. 賴曉芬 主婦聯盟環境保護基金會董事長
24. 鍾秀梅 國立成功大學臺灣文學系副教授
25. 簡好儒 國立臺灣大學社會學系助理教授
26. 闕河嘉 國立臺灣大學生物產業傳播暨發展學系副教授
27. 蘇慕容 慈心有機農業發展基金會執行長

### (二) 議題方向包含:

1. 作物生產的氣候衝擊與倫理
2. 動物生產的氣候衝擊與倫理
3. 土地倫理與規劃
4. 消費者與食安
5. 食農教育

6. 糧食主權與正義
7. 性別與食物
8. 原住民族的食物主權
9. 基因改造食物與倫理
10. 多元族裔與飲食文化
11. 其他

## 五、 工作內容

### (一) 會議規劃：

1. 大會名稱  
2018 年亞太地區農糧與食物倫理國際研討會-氣候變遷與食物的未來挑戰  
(2018 APSafe conference- Climate Change and Food: Challenges for the Future)
2. 會議時間  
2018 年 5 月 10 日 (四)至 5 月 12 日(六)，共 3 天
3. 舉辦地點  
集思臺大會議中心
4. 主辦單位  
臺灣鄉村社會學會
5. 初步議程規劃

Thursday, May 10, 2018		Friday, May 11, 2018		Saturday, May 12, 2018
09:00-09:20 <b>Opening Ceremony</b> <b>Matthias Kaiser</b>		09:00-09:50 <b>Keynote 3</b> <b>Walden Bello</b>		09:00-09:50 <b>Keynote 4</b> <b>Poul Molm</b>
09:20-10:20 <b>Keynote 1</b> <b>Kirill Ole Thompson</b>		09:50-10:20 Coffee Break		09:50-10:20 Coffee Break
10:20-10:30 Coffee Break		10:20-11:30 <b>Session 5</b> <b>Food and Agricultural Education</b>	10:20-11:30 <b>Session 6</b> <b>Gender and Food</b>	10:20-11:30 <b>Session 10</b> <b>Ethnic Groups and Food Cultures</b>
10:30-12:00 <b>Session 1</b> <b>Crops Production in Climate change and Ethics</b>	10:30-12:00 <b>Session 2</b> <b>Animal Production in Climate change and Ethics</b>			
12:00-13:30 Lunch		11:30-13:30 Lunch and Poster Presentation		12:00-17:00 Taiwan Agriculture Tour
13:30-15:00 <b>Session 3</b> <b>Consumer and Food Safety</b>	13:30-15:00 <b>Session 4</b> <b>Food Sovereignty and Justice</b>	13:30-15:00 <b>Session 7</b> <b>Indigenous People's Food Sovereignty</b>	13:30-15:00 <b>Session 8</b> <b>Planning and Land Ethics</b>	
15:00-15:20 Coffee Break/Poster Sessions		15:00-15:20 Coffee Break/Poster Sessions		
15:20-16:20 <b>Keynote 2</b> <b>Paul B. Thompson</b>		15:20-16:50 <b>Session 9</b> <b>Ethics and Genetically Modified Food</b>		
17:00-19:00 Welcome Reception		17:30-19:30 Conference Dinner		

## 6. 會議主席

	姓名	服務機關
1	Matthias Kaiser	Centre for the Study of the Sciences and the Humanities, University of Bergen, Norway
2	王俊豪	國立臺灣大學生物產業傳播暨發展學系 臺灣鄉村社會學會理事



## 7. 籌備委員

	姓名	服務機關
1	Kirill O. Thompson	國立臺灣大學人文社會高等研究院
2	郭華仁	國立臺灣大學農藝學系
3	闕河嘉	國立臺灣大學生物產業傳播暨發展學系

## 8. 編輯委員會

	姓名	職稱	服務機關
1	汪中和	兼任研究員	中央研究院地球科學研究所
2	朱增宏	執行長	臺灣動物社會研究會
3	徐世榮	教授	國立政治大學地政學系
4	郭曉芬	董事長	主婦聯盟環境保護基金會
5	張瑋琦	副教授	國立清華大學環境與文化資源學系
6	彭明輝	榮譽退休教授	國立清華大學動力機械工程學系
7	蔡宴霖	副教授	國立交通大學人文社會暨族群與文化所
8	官大偉	副教授	國立政治大學民族學系
9	郭華仁	名譽教授	國立臺灣大學農藝學系
10	李丁讚	榮譽退休教授	國立清華大學社會學研究所

## 六、 經費預算表(含經費來源)

### (一) 預算總表：

本研討會除報名費及政府補助申請，其餘自籌款的募款，資訊如下：

支出項目	自籌配合款
場地租金費	190000
印刷費	160000
文宣廣告費	30000
演講鐘點費	35000
講師機票費與食宿費	950000
口譯費	130000
交通費	120000
場地佈置費	35000
同步翻譯設備租金費	230000
餐飲費	490000
臨時人員費	320000
講師實地考察費	390000
行政事務費	420000
總計	3500000

## (二) 經費來源：

來源	單位名稱	金額
政府/民間團體補助	科技部	500,000
	經濟部國貿局	73,550
	農委會	1,500,000 (申請中)
	主婦聯盟	600,000 (申請中)
主辦單位自籌	報名費	250,000
	其他自籌	576,450
計畫總經費		3,500,000

## (三) 主婦聯盟公益金支出項目預估：

由於政府計畫補助款有嚴格且不合時宜的核銷規定，為能順利辦理亞太地區農糧與食物倫理國際研討會，亟需民間公益團體的資金協助，始能善其工。基此，未來貴社公益金資助的預計投入項目，包括：場地租金、現場口譯人員和視聽設備、歡迎晚宴與演講嘉賓大會晚宴之餐會與布置、會議餐飲和茶點、講員禮品、演講嘉賓機票補助、住宿安排、考察旅遊和社交活動、大會期間專業會議拍照和活動錄影等用途。

## 七、預期效益與回饋贊助

2018 年亞太地區農糧與食物倫理國際研討會的召開，預計邀請國內外 25-30 位專家學者，分享實務經驗、交流研究成果；徵得國內外專業投稿 60 篇，匯集環保生態、農業、農糧與食物倫理的豐富專業知識。期能吸引至少 250 位國內外與會者，並透過 15 場不同主題，例如：動物與作物生產的氣候衝擊與倫理、土地倫理與規劃、消費者與食安、糧食主權與正義、基改食物與倫理...等演講，傳達對珍愛環境資源、環境友善、永續發展、實踐綠生活的理念。

### (一) 對臺灣主婦聯盟生活消費合作社的回饋辦法：

貴社的捐款用途分為指定用途、未指定用途兩大類。指定用途者含研討會籌辦所需之場地租金、視聽設備、會場佈置、印刷製作物、演講嘉賓考察旅遊等項目之全額或部分金額；未指定用途者（不限金額），則由本大會籌備單位統籌運用。

本大會針對企業與社會大眾的捐款，均會開立捐款收據，同時刊載於本大會捐款芳名錄（不限金額）。

- 回饋項目 1：將於研討會活動現場舞台背板露出贊助單位名稱，並垂掛感謝長布條或依現場狀況以立牌替代。
- 回饋項目 2：提供 50 位名額免費參加本次大會，現場聆聽農業暨食物倫理學會 (EurSafe) 理事長 Prof. Dr. Matthias Kaiser、另類諾貝爾獎得主 Dr. Vandana Shiva、



農業、食物與人文價值學會理事長 Prof. Dr. Paul Thompson，及歐洲社會與人文科學聯合會主席 Prof. Dr. Poul Holm 專題演講和面對面交流的機會。

- 回饋項目 3：提供 10 位名額免費參加「農糧與食物倫理工作坊」。此回饋項目目前正在與演講嘉賓密切聯繫規劃中，尚需視演講嘉賓抵台與停留時間決定，若能成功開辦此工作坊，則為額外的回饋項目。

## （二）整體的社會效益：

本大會說帖除闡述 2018 年「亞太地區農糧與食物倫理」國際研討會（APSafe）的宗旨、籌辦過程與現有進度外，更誠摯邀請社會各界賢達能共襄盛舉，齊心關注亞太地區氣候變遷、農糧生產、食品安全與環境守護的倫理課題。您的捐贈善款，不僅有助於促成臺灣成為推動亞太地區食物倫理的學術重鎮，更能倍增國際性會議在臺舉辦之綜合效益：

### 1. 拓展國人對食物倫理之國際視野，並提升臺灣的國際學術地位。

本次大會可提供臺灣年輕學者以較低成本參與國際會議的機會，透過與國際學者的研究交流，激盪出人文與社會科學、自然科學、農業與食品專業等跨領域之學術火花，培養其參與國際事務的學術能力、建立終身學習的信念，增進國內專業人士與相關系所學生之視野，立足臺灣、放眼世界。相對的，促使與會外籍人士之交流印象，提升臺灣在國際間的學術地位與能見度。

### 2. 促成世界各國學者專家共同倡議農業生產與食物消費的倫理價值。

氣候變遷對於全球環境的負面影響，不僅直接衝擊到農業的永續發展，更進而引發糧食生產、消費與分配正義的問題，已是世界各國不同學科領域之專家學者應正視的當代倫理課題，舉凡農業生產的氣候衝擊、土地規劃與利用、基因改造食物、消費者的食安保障、食農教育的法制化、糧食主權與分配正義、性別、原住民族與食物關係、多元族裔與飲食文化承傳等，均需要賦予嶄新的理念與價值觀來重新建構人類、食物與自然的和諧共生關係。

### 3. 強化臺灣的國際形象，推廣外籍友人來臺觀光旅遊。

本次會議已規劃多場精彩可期的國際知名學者之專題演講和學術論文發表活動外，會中亦精心安排多項社交活動，包含讓小農食材和在地特色餐飲融入歡迎酒會、會議餐點與大會晚宴中，更策劃國外人士在與會之餘，也能進行城市旅遊等，對於臺灣特有民俗風情留下深刻而美好的印象，推動我國觀光產業發展並刺激周邊消費，打開日後來臺旅遊的契機。

## 八、計畫執行期程

### （一）全程計畫：

自 2017 年 5 月 1 日至 2018 年 7 月 31 日止

(二) 本年度計畫：

自 2018 年 1 月 1 日至 2018 年 7 月 31 日止

(三) 籌備進度：

日期	工作項目內容
2017 年 5-7 月	投稿論文領域、投稿規範等確認 第一波講員邀請函寄發
2017 年 8 月	大會網站上線
2017 年 9 月	會員管理系統及論文投稿系統上線 會議場地確認簽約 申請科技部補助
2017 年 10-11 月	進行本研討會的國內與國際宣傳
2017 年 12 月	摘要提交截止 第二波講師邀請函寄發及確認
2018 年 1 月	審查結果通知 報名系統上線 受邀講師 CV 及講演題目收集
2018 年 2 月	確認座長邀請名單擬定並發送邀請函 展覽攤位劃分 全文繳交截止
2018 年 3 月	會議論文編輯 會場佈置安排規劃提案 節目、晚會表演節目與團體規劃提案 受邀講師場次確認及通知 座長名單確認 早鳥優惠截止
2018 年 4 月	最終議程確認 線上報名截止 貴賓出席名單確認 會場佈置規劃確認 餐飲確認 報到接待人員徵選與訓練 餐宴時間、地點和內容確認 各項會議出版物印製
2018 年 5 月	進場、彩排確認 會議期間開放現場報名 2018 APSafe conference 召開
2018 年 6-7 月	準備、撰寫成果報告與成效評估資料 計畫核銷作業

## 附件資料：

### 附件 1 2018 年亞太地區農糧與食物倫理國際研討會的開辦宗旨之英文聲明

Agricultural and food activities today exert a range of wide-spread, multifaceted impacts on the climate and environment. Notably, agricultural and food activities produce an estimated 10% to 12% of human-generated green-house gases, particularly from livestock, rice paddies, overuse of fertilizers, not to mention slash and burn farming. Moreover, when the impact of deforestation and other forms of land clearing for farming is included, agriculture's net contribution to greenhouse gas production rises to 24% globally. Consequently, climate scientists warn that people involved in agriculture and food production, must strive to innovate ways to reduce the adverse impact that these activities climate exert on the climate and environment.

Immediate steps must be taken to reduce the climate and environmental impact of agriculture and food production-- as well as of other human activities-- lest a series of unprecedented humanitarian disasters unfold. While the global news media and officialdom remain distracted and obsessed with fanciful political tweets and personalities, the greatest humanitarian crisis since 1945 looms in plain sight. At this very moment, over 20 million people face a serious risk of starvation and famine in Yemen, South Sudan, Somalia, and northeast Nigeria. Without coordinated worldwide efforts to provide vast infusions of food and medical assistance, countless people soon will begin to starve to death and more will suffer and die of disease. The root cause of this humanitarian disaster is long-term drought caused by side effects of climate change, and the effects of the long-term drought are magnified by civic unrest and civil war in the course of which besieged leaders deny infusions of aid they deem might energize enemy and potential enemy forces.

The climatic impact of food production goes in hand with far-reaching environmental impacts. In particular, modern agriculture is increasingly invasive. Armed with heavy machinery, it spurs the clearing of bio-diverse tropical forests, the farming of formerly marginal lands, thus destroying niche wildlife habitats; moreover, it intensifies the thrust of industrial farming in sensitive landscapes and watersheds. Today, a vast portion of the Earth's landmass is already under the plow. At the same, every day more precious farmland is being sold off for alternative uses: industrial, residential, recreational. In the United States alone, expanding suburbanization is laying waste to vast tracts of precious farm land, which is sold off at unheard of prices. Some modern urbanites retreat to the countryside to farm or operate a hobby farm, but few are equipped to farm in the full sense of the word and productivity falls off.

The climate and environmental footprint of agriculture and food production on the surface of the Earth is 60 times that of all the world's pavements and buildings. Moreover, through increased irrigation, modern agriculture is depleting the world's rivers and aquifers. For example, excessive irrigation in the US and India is leading to diminished and disappearing river flows and declining water tables. In recent decades, China (emerging industrial countries) has been over-damming her rivers as well as fouling her lakes, rivers, and coastlines. Moreover, modern agriculture increasingly contaminates the surrounding river and lake waters with fertilizers, pesticides, and herbicides, causing not just water pollution but "dead zones" at the mouths of many rivers. A staggering 50% of fertilizer runs off into waterways.

At the same time, increased agricultural production is required to feed the world. At present, besides the looming famine in sub-Saharan Africa, a staggering 1 billion people suffer from chronic hunger and malnutrition. Ironically, there is sufficient food under cultivation to feed everyone globally, but the food isn't properly distributed and many people lack the money to purchase it. The markets increasingly follow the consumer dollar and there is reduced distribution according to need. By the year 2050, the world population will have grown by 2 to 3 billion but the land available for cultivation may well drop due to the diversion of farmland to other endeavors. At the same time, demand for food will double in the next thirty years, but demand for biofuels and other non-food



products, such as palm oils, will rise and sap food crop production. Hence, even if the food distribution and poverty problems are solved, crop production will still need to be at least doubled to assure adequate food supplies worldwide.

We who work in agriculture and ponder agricultural and food issues increasingly face an existential ethical challenge to ensure that the 7 million—and rising—people of planet Earth have access to nourishing food while at the same time reducing agriculture's adverse impact on the climate and the environment. As noted, the multiple challenge is to ensure that food production is doubled and more fairly distributed in the coming decades while at the same time making sure that this food production is done in more sustainable and environmentally friendly ways.

At a certain level, this multiple challenge is a practical problem, and is amenable to technological remedies. Nonetheless, the scientists and technologists need to be rallied to the cause, and the farmers and other food producers need to be persuaded to change their practices, a hard sell if they perceive the changes as infringing on their right of choice and affecting their bottom line. Perspicacious official leadership and wise counsel are needed to lay out the stakes, offer guidance, and bring the stakeholders to the table. This is why and where the social and ethical dimensions of this multiple challenge come to the fore.

**Importantly, the practical urgency of this multiple challenge can be viewed as giving new meaning and impetus to every issue and concern of agricultural ethics and food ethics.**

In summary, the main issues and concerns of agricultural and food ethics proper include the following, food systems, climate change, and environmental impact; food distribution and justice; food security and the ethics of assistance; animal welfare and the ethics of producing meat; bioengineering; GMO crops; synthetic meat; food and health; diet and nutrition; food and culture. Many of these ethical issues and concerns stem from the rise of modern agriculture and food production and culture. East Asia and Southeast Asia also feature age old agrarian traditions, knowledge, and practices, which tend to be sustainable, environmentally friendly, and applicable in certain environmental niches where modern equipment and methods fear to tread. In some locales in Asia and elsewhere, traditional agrarian and food production practices are returning following misguided boom and bust introductions of modern agriculture. All of these ethical issues and concerns promise to offer needed counsel for cleaner and more climate friendly approaches farming and food production.

This will be an interdisciplinary conference and presentations from the humanities and social sciences as well as the natural sciences and agriculture and food science will be welcome. Abstracts will be welcomed that address any aspect, issue, or concern of agricultural and food ethics, including climate and environment, from field to table, from any perspective.

Despite the amazing success of the postwar green revolution, increased crop yields have not been so dramatic over the past 50 years. Recent crop yield increases have not been nearly enough to double production in the next 30 years. Additionally, fewer crops are going to food: only 60% of crops go to human food consumption overall nowadays. 35% goes for animal feeds, 5% for biofuels and other industrial products. Also, feeding grain to livestock to produce meat is a tremendous drain on the global food supply. The blue revolution in aquaculture is similarly hitting production limits as well as facing unforeseen environmental impacts.

In the past, food concerns could override environmental imperatives: we could boost food production by clearing more land, using more water and/or chemicals, though at a cost to forests, streams, and wetlands. Or, we could still restore farmland to nature—at the cost of reduced food production. Such either/or approaches are no longer practicable or acceptable given the rising demand for food and the need to stymie and reverse environmental devastation and climate impact. More well-integrated solutions to the multifold problems are needed at this juncture.

Based on months of research and deliberation on global agricultural and environmental data, a

*Scientific American* team of experts came up with a 5-point plan that tackles food and environmental challenges together (Foley 2015).

### **1. Stop expanding agriculture's environmental and climate footprint.**

Stop expanding agriculture into new lands, especially into tropical forests and savannas. Such ecosystems are vital to the climate and environment. Their destruction for agricultural uses poses a threat to global bio-diversity and risks increased production of CO<sub>2</sub> emissions. Slowing such deforestation would reduce environmental and climate harm but have little negative impact on food production. Any resulting dip in food production could be offset by reducing the loss of productive farmland to urbanization, degradation, and sheer abandonment. The REDD plan is in place to reduce deforestation by having rich nations pay poor ones to protect rain forests for carbon credits. Furthermore, a certification system may be set up to assure that food products were not grown on lands created by deforestation. A better biofuel policy could be enacted to encourage use of nonfood crops-- such as switchgrass rather than food crops like corn—to produce biofuels, thus keeping vital farmland available for food crops.

### **2. Close the world's yield gaps.**

There are two ways to improve yields on existing farmland: 1) raise the yield ceiling of the best, most productive farmlands, through GMO seed and/or better crop management, or 2) improve yields of the least productive farms: to help those farmlands reach their yield potential (details below. Importantly, suggestion 2) has the most promise in regions where hunger is most acute. Regions at risk: parts of Africa, Central America, and Eastern Europe. In these places, better seed, better use of fertilizers, and more efficient irrigation, could increase food production substantially without using more land. In this way, production of the top 16 crops could be increased by 50% to 60% without appreciable new environmental damage. Farmers will have to irrigate and fertilize in more responsible ways, for example, by reducing tillage and thus erosion, by planting offseason cover crops to suppress weeds and increase soil nutrients, and by leaving crop residue to add soil nutrients. (These are lessons from organic and agroecological farming. Some socio-economic challenges include, provide 1) more efficient and effective distribution of fertilizer and seed varieties to farms, and 2) better access to global markets for farmers in these impoverished regions.

### **3. Use resources more efficiently.**

All farmers need to learn to appreciably increase crop output per unit of water, fertilizer, and energy. Now, one liter of water creates one calorie of food. Farmers could curb water use without significant loss of food production, especially in dry climates, for example, by using drip irrigation (directly to plant base), mulching, reducing water loss to evaporation, especially from canals and reservoirs. Reconsider the use of fertilizers, we witness the Goldilocks problem: farmers tend to use either too little or too much fertilizer, few farmers use just the right amount needed. Farmers in the US heartland, China, and northern India use much too much fertilizer. Others in poor countries with nutrient poor soil don't have enough fertilizer. Fertilizer overuse may be reduced by policy and economic incentives: e.g., pay farmers for watershed stewardship & protection. Encourage better manure management (less runoff into watersheds), catch excess nutrients via recycling, and other conservation practices. Restore wetlands to enhance their function as sponges to filter nutrients in runoff. Reduce tillage to nurture soil fertility. Encourage the practice of precision agriculture (e.g. apply fertilizer and water only where and when needed and effective), and implement organic farming techniques.

### **4. Shift diets away from meat.**

Encourage using more crops to feed people, less to fatten livestock. This would create a boon to food availability and environmental sustainability. Any sort of shift to plant diets would increase calorie availability by 50% worldwide. Admittedly, given current food customs, systems, and values, a total shift to plant based foods is not in the cards. Still, even small shifts in diet, say, from grain

fed beef to poultry, pork, or range beef, would have positive effects on the environment and climate.

## **5. Reduce Food Waste.**

At present, roughly 30% of the food produced on Earth is discarded, lost, spoiled, or consumed by pests. In rich lands, most waste is with the consumer. Small changes can go a long way: reduce the size of oversized portions, the amount of thrown out food, and the number of waste from restaurant and take-out meals would trim losses and waistlines. In poor lands, most waste is with the producer in the form of failed crops, ruined stockpiles (poor facilities), undelivered food (poor infrastructure). There is widespread need to improve storage, refrigeration, and distribution systems to cut waste in these regards. Better market tools are needed to link farmers to consumers, e.g. the growing use of cell phones in rural Africa. There will always be waste from farm to fork, but each small step will help. Targeting waste of resource intensive perishables, such as meat and dairy, would go a long way.

Steps such as these offer some insight into the problem of increasing world food availability while lowering greenhouse gas emissions, biodiversity losses, water use, and water pollution and the ravages of climate change in the coming decades.

It is important not to be single-minded or overly purist but to try out the best ideas from everywhere: the green revolution, industrial scale farming, family farming, organic farming, local food systems, and traditional methods, in forging new approaches, and coming up with a composite, sustainable new food system, focused on nutritional, social, and environmental performance, to bring responsible food production to scale. This would result in a network of local food production systems that are sensitive to regional climate conditions, water resources, ecosystems, and culture.

To reiterate, the three major food problems the world must solve in the coming decades are to: 1) end hunger, 2) double food production by 2050, and 3) drastically reduce agriculture's damage to the environment. Among other strategies, five steps that might be taken in addressing these problems include: 1) stop agriculture from taking more tropical forests and savannas, 2) boost the productivity of low-yield farms, 3) increase the efficiency of water and fertilizer use, 4) reduce per capita meat consumption, and 5) reduce waste in food production and distribution.

This conference statement benefited from Foley 2015 and the other sources.

附件 2 歐洲農業暨農糧與食物倫理學會 (EurSafe)授權信





From: Prof. Dr. Matthias Kaiser  
Centre for the Study of the Sciences and the Humanities  
University of Bergen  
5020 Bergen  
Norway

Bergen, 13 August 2017

**Authorization: Holding the AP-SAFE conference in Taiwan 2018**

To whom it may concern:

I, Matthias Kaiser, am acting as *Foreign Ambassador* of the *European Society for Agricultural and Food Ethics* (EurSafe). I have been authorized by the EurSafe President, Prof. Kate Millar, and its Executive Board, to represent EurSafe in all matters concerning the planning of the 2018 AP-SAFE Conference in Taiwan.

The following principles are stated to foster cooperation:

- (1) EurSAFE welcomes the development of the *Asian-Pacific Society for Agricultural and Food Ethics* (AP-SAFE).
- (2) EurSAFE regards AP-SAFE as an independent sister organization, implying that all organizational and academic matters of AP-SAFE are decided independently, while EurSafe offers its advice and help.
- (3) EurSafe is very favourable to the offer by various units of the National University of Taiwan to host the next AP-SAFE conference in 2018.
- (4) EurSafe recommends to establish AP-Safe as a legally registered international academic society as quickly as possible, and hopefully in Taiwan.

As previously communicated, I am happy to assist in any matter concerning this issue. I am also looking forward to the official announcement of the conference on an appropriate website.

Kind regards,

Matthias Kaiser,  
Past-President of EurSafe

全國性及區級人民團體立案證書

台內社字第八九〇六四九八號

台灣鄉村社會學會業已依法

組織完成准予立案 此證

計開

團體名稱：台灣鄉村社會學會

成立日期：八十九年一月八日

會址所在地：台北市羅斯福路四段一號國立台灣大學農推系五樓五〇三室



內政部部长

黃主文



中華民國八十九年三月

日



中華民國國民身分證



姓名 王 俊 豪

出生  
年月日 民國 53 年 11 月 27 日

性別 男

發證日期 民國 95 年 10 月 24 日 (北市) 換發

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