



## News from the International HPH Network

# Plant-based diet to offset flight carbon emission – an experience from the 2012 HPH Conference in Taiwan

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### About the AUTHORS

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In a letter exchange in *BMJ* in 2008, it was debated whether international medical conferences – which in total produce 600,000 tonnes of carbon emissions per year from flights alone – are an “outdated luxury that the planet can’t afford” (1; 2).

Earlier this year in *JAMA*, John Ioannidis further questioned the usefulness of medical conferences, in addition to reminding readers of the associated climate costs (3). In response to Ioannidis, Richard Horton (4) Editor-in-Chief of the *Lancet* shared his experiences at an inspiring conference in Cape Town with only 250 attendees, but where almost 70 were specialists from African countries that would optimally benefit from this gathering. Kevin Anderson, a climate scientist, shared in *Nature* reasons that he refused to participate in Planet Under Pressure – a leading conference to solve problems related to climate change (5). In his view, both the conference and its carbon-offset projects would inevitably set up the breeding grounds for high-carbon-lifestyle in the future. As demands for energy continues to rise and resources diminish, innovative solutions to ensure a greener conference will be in demand and all fields, especially the healthcare sector, will need to take the lead in cutting carbon foot print.

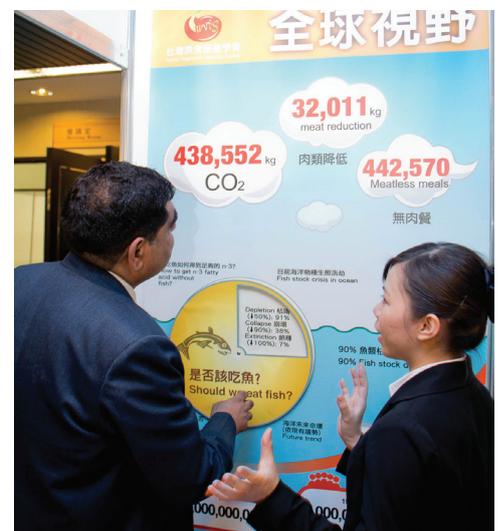
In April, the International HPH Network held its 20th International Conference in Taiwan (the first time outside Europe). 1356 health professionals met to share experiences in preventive medical care and health promotion, and of these, 307 were international professionals flying in for the conference. For the many international delegates, on-site visits of local

health-promoting hospitals, which were not easily substituted by online sessions, were particularly inspiring. The exhibitions at the conference were hosted by local health-promoting hospitals and non-profit organizations; sharing innovations and services that promote healthy lifestyles, reduce health inequalities, and enhance environmental sustainability.

One of the exhibitors (including two co-authors; Chiu and Lin) created an opportunity for delegates to offset carbon emissions from international flights through a plant-based diet, defined as “an eating pattern dominated by fresh or minimally processed plant foods and decreased consumption of meat, eggs, and dairy products” (6). The flight emissions for the 307 international delegates totalled 439,000 kg of CO<sub>2</sub>, estimated with an online flight emission calculator (7). To offset the flight emissions, we invited all participants to adopt a plant-based diet



Hitting the gong for a better environment. This attendee signed the pledge to reduce her CO<sub>2</sub> emissions by reducing meat intake.



The concept is described to an interested conference attendee.



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for 1 year, as livestock is a major sector that generates greenhouse-gas emissions (8). After the invitation was announced in the plenary session, many delegates were eager to support the cause. Within two days, 573 people (of 1356 total participants) took up one of 6 yearlong pledges to varying degrees: 1) there were 195 people who pledged to eat vegetarian meals for 1 full day every week; 2) 166 for 1 meal every day; 3) 102 for every meal; 4) 63 for 2 meals each day; 5) 27 for every meal in the weekday; 6) 20 for every meal in the weekend. These pledges are equivalent to a potential reduction of 191,000 kg CO<sub>2</sub>, or 44% of the participants' international flight emissions (calculations in Appendix 1). The pledges by 94 (of 307) international delegates accounts for 16% of carbon emission estimated to be offset, while the remaining 84% are covered by 479 (out of the 1049) Taiwanese delegates.

One caution is that these calculations are based on an average meat intake of Taiwanese adults (55.8 kg per person per year) obtained from the 2005-2008 Nutrition and Health Survey in Taiwan (9). Although this may not represent the meat intake for foreign delegates, it is a close approximation as Taiwanese delegates accounted for the majority of attendees and pledges. It may be worth noting that because most of the delegates and most of the pledges were by Taiwanese participants, there is some degree of 'subsidisation' of the international delegates' emissions by Taiwanese participants. Another limitation is that the CO<sub>2</sub> emission for meat and soy were based on estimations from Sweden (10), as no such data is available in Taiwan. Also, the fulfilment of the pledges is not guaranteed and the calculated potential reduction in CO<sub>2</sub> emission is an optimistic, upper and approximate estimate. We do not know the extent to which plant-based diet pledges are fulfilled in general. With this in mind, if all delegates committed to eat one vegetarian meal a day for a year (or reduce meat consumption by 30%), a large percentage (77%) of the total flight emissions could potentially be offset. This 30% reduction in meat intake has been suggested by Friel and

others (11), as an important and healthful step to reduce greenhouse-gas emission by 50% by 2030; a required intermediate step for achieving the UK Committee on Climate Change's goal of 80% reduction by 2050 (11).

It is encouraging that 42% of the conference attendees may be willing to make changes to their dietary habits for the sake of the planet. As health care practitioners and health promotion experts, these delegates may be able to exert substantial impact if they could recruit more people to adopt a plant-based diet. Until technology for clean energy and low carbon air travelling matures, promoting and adopting healthful plant-based diets may be one practical way to achieve the still elusive goal of zero-carbon international conferences.



### Appendix - calculations

The calculation of CO<sub>2</sub> offset with a plant-based diet is based on average meat consumption among Taiwanese adults, who represented the majority of the conference delegates (1,049 out of 1,356 or 77%), and those who took pledges (479 out of 573 or 84%). The average Taiwanese meat consumption was obtained from the 2005 – 2008 Nutrition and Health Survey in Taiwan with samples from representative regions, ethnics, and age groups of the Taiwanese population, using face to face interviewed 24 hour recalls, assisted by a weighted food model to facilitate accurate estimation of food portion size (9).

The calculation of CO<sub>2</sub> offset from an average individual diet is based on the following steps:

- Step (1): Estimation of CO<sub>2</sub> emission per kg of meat consumption
- Step (2): Estimation of CO<sub>2</sub> emission from meat consumed in a year for a typical Taiwanese adult.
- Step (3): Estimation of CO<sub>2</sub> offset from vegetarian pledges



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### Step (1): Estimation of CO<sub>2</sub> emission (kg) per unit meat consumption (kg):

**Table 1** Calculation for weighted average kg of CO<sub>2</sub> emission for 1 kg of meat consumption

Types of meat	Red Meat (a)	Poultry (b)	Fish and seafood (c)	Total (a) + (b) + (c)
(1) CO <sub>2</sub> emissions (kg) per production of meat (kg)(10)	19.7*	4.3†	8.5‡	..
(2) Average Taiwanese meat consumption per day** (9)	223 kcal	69 kcal	90 kcal	382 kcal
(3) Percentage of total meat consumption (based on kcal)	58%	18%	24%	100%
CO <sub>2</sub> emissions (kg) per average kg meat consumption (1) × (3)	11.4	0.8	2.0	<b>14.2</b>

\*Average of beef and pork, †Chicken, ‡Cod. \*\*Average of men and women. Kcal: Kilocalories, the measurement for energy or caloric intake.

Climate impact of soy equivalent is subtracted from that of meat, as an equivalent amount of protein from plant sources is needed to replace meat intake in order to ensure equal nutrition.

- CO<sub>2</sub> emission (kg) per 1 kg of soy: 0.92(10)
- 1 serving of protein food (defined by 7g of protein): 30g of edible portion of red meat/poultry/fish or 20g of soy (12).
- Calculation of soy equivalent to 1 kg meat:
  - 1kg of meat = 1000g ÷ 30g/serving = 33.3 servings
  - 33.3 servings of soy = 33.3 × 20g/serving = 667g of soy
  - 1 kg of meat is equivalent to 0.67kg of soy in terms of protein content
- Climate impact of soy equivalent to 1 kg of meat: 0.67 kg soy × 0.92 kg CO<sub>2</sub>/kg soy = 0.62 kg CO<sub>2</sub>
- Net emission of 1 kg of meat = emission of 1 kg meat – emission of 0.67 kg soy = 14.2kg – 0.6kg = 13.6 kg CO<sub>2</sub>

### References

- (1) Drife JO. Are international medical conferences an outdated luxury the planet can't afford? No. *BMJ* 2008; 336:1467.
- (2) Green M. Are international medical conferences an outdated luxury the planet can't afford? Yes. *BMJ* 2008; 336:1466.
- (3) Ioannidis JP. Are medical conferences useful? And for whom? *JAMA* 2012; 307:1257-1258.
- (4) Horton R. Offline: Why (some) medical conferences make sense. *The Lancet* 2012; 379:1376.
- (5) Anderson K. The inconvenient truth of carbon offsets. *Nature* 2012; 484:7.
- (6) Lea EJ, Crawford D, Worsley A. Public views of the benefits and barriers to the consumption of a plant-based diet. *Eur J Clin Nutr* 2006; 60:828-37.
- (7) Flight Emission Calculator. <http://www.travelnav.com/flight-emissions/>

### Step (2): Estimation of CO<sub>2</sub> emission from meat consumed in a year for a typical Taiwanese adult:

- Average nutrient content of 1 serving of meat, poultry, fish (30g edible portion): 75kcal, 7g protein(12). Note: calories for 1 serving (per 7g protein) of red meat such as beef and pork could vary by the parts (cuts) of the animal body, depending on the fat content, and 75kcal is the amount of calories designated for medium fat portion, where each serving contains about 5g fat. A lean cut of meat contains 3g fat and 55kcal per 7g protein, and a fatty cut of meat contains 10g fat and 120kcal per 7g protein.
- Average daily meat consumption in Taiwanese adult: 382 kcal per day (Table 1), equivalent to 5.1 servings or 153 g of meat: Calculation of the amount of meat consumed per day: 382 kcal ÷ 75kcal/serving = 5.1 servings  
5.1 servings × 30g/serving = 153 g
- Average annual meat consumption in Taiwanese adult: 0.153kg/day \* 365days = 55.8 kg
- Emission associated with meat consumption for a typical Taiwanese adult in 1 year = 55.8kg meat\* 13.6 kg CO<sub>2</sub> / kg meat = **759 kg CO<sub>2</sub>**

### Step (3): Estimation of CO<sub>2</sub> reduction from vegetarian pledges:

Types of vegetarian pledges	Proportion of vegetarian meals (a)	Estimated CO <sub>2</sub> reduction (kg) per person (b)*	Number of people took the pledge (c)	Estimated total CO <sub>2</sub> reduction (kg) †
1 day per week	1 / 7	108	195	21,060
Week days	5 / 7	542	27	14,634
Weekends	2 / 7	217	20	4,340
1 meal per day	1 / 3	253	166	41,998
2 meals per day	2 / 3	506	63	31,878
Full time Vegetarian	3 / 3	759	102	77,418
Total CO <sub>2</sub> reduction from vegetarian pledges (kg)				<b>191,328</b>

Notes \* Calculated by multiplying (a) by 759kg CO<sub>2</sub> (emission associated with meat consumption in a year, from Step (2)); † Calculated by multiplying (b) by (c)

- (8) Steinfeld H, Gerber P, Wassenaar TD et al. (2006) *Livestock's long shadow: environmental issues and options*. Rome: Food and Agriculture Organization of the United Nations.
- (9) Pan WH, Wu HJ, Yeh CJ et al. Diet and health trends in Taiwan: comparison of two nutrition and health surveys from 1993-1996 and 2005-2008. *Asia Pac J Clin Nutr* 2011; 20:238-50.
- (10) Carlsson-Kanyama A, Gonzalez AD. Potential contributions of food consumption patterns to climate change. *Am J Clin Nutr* 2009; 89:1704S-1709S.
- (11) Friel S, Dangour AD, Garnett T et al. Public health benefits of strategies to reduce greenhouse-gas emissions: food and agriculture. *Lancet* 2009; 374:2016-25.
- (12) Lee HR (2006) *Manual for Clinical Nutrition*. Taipei: Department of Health.



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# Putting the National HPH Network of France back on the map

### About the FRENCH NETWORK

France joined the International HPH network in 1997 and steadily grew to 15 members by the end of 2009 under the coordination of Dr. Pierre Buttet at the French National Institute for Prevention and Health Education (INPES).

After an internal reorganisation and a job change for Dr Buttet, the HPH project was temporarily "on holding" as there was nobody available to take over the coordination. Now Ms Andrea Limbourg has been installed as network coordinator with the aim of revitalising the French HPH Network.

To get more information go to the French National Institute for Prevention and Health Education's (INPES) website [www.inpes.sante.fr](http://www.inpes.sante.fr)

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2012 marks a new beginning for the National HPH Network of France. After more than 2 years without a national coordinator, the position has been refilled and network activity officially relaunched. Andrea Limbourg took on the coordination role at INPES in the spring and was immersed right away in the HPH world by attending the international conference in Taipei in April. She describes the week in Taiwan:

"The conference provided so much in the way of resources and inspiration. Once I got over the feeling of being completely overwhelmed by the sheer quantity of information and the quality of projects presented, I was ready to get to work to rebuild a network that was once quite active nationally as well as at the international level. I particularly appreciated the opportunity to network with other new and not-so-new National and Regional coordinators and look forward to working with them on more concrete projects in the future."

In order to establish an initial contact with the French hospitals already engaged in the network, a national meeting took place on June 26th 2012. In total there were nine hospitals and health services present at the meeting. Eight others were represented and five more still would have liked to have been there but were not available to come on that day. As the numbers suggest, some of the attendees are not yet members of the network so new interest is already being generated.

The meeting was very positive and productive. Hospitals in the network were able to share their experiences with regards to internal and external support (or lack thereof) in the development, financing and understanding of their health

promotion projects. There is a definite interest from all involved in restarting network activities and the highest priorities to start off will be given to national communication and rebuilding partnerships.

In an effort to educate, disseminate information and provide leverage, national network communication materials will be updated and a collaborative workspace will be created to provide a platform to share questions, difficulties, documentation and resources. In addition, a National HPH Committee will be formed, not necessarily to pilot and make decisions for the network, but more to provide support, strengthen partnerships and facilitate communication of the network's activities.

Specific projects in the works for 2013 include an issue dedicated to health promotion in the hospital setting in INPES' quarterly journal *La Santé de l'Homme* and a day-long seminar in June to help promote local health promotion projects and generate new interest for the network. It will be a busy year ahead for the National HPH Network of France!



(Photo: [inpes.sante.fr](http://inpes.sante.fr))



## News from the International HPH Network

# Japan moves on establishing a national HPH Network

**As the International HPH Network continues to increase its membership, new countries show interest in establishing national networks.**

### About the MEMBERS IN JAPAN

The 7 Japanese HPH members are:

- Chidoribashi General Hospital
- Tokyo Kensei Hospital
- Oizumi Health Cooperative Hospital
- Misato Kenwa Hospital
- Kamiina Co-op Hospital/Kamiina Medical Co-op
- Tatara Rehabilitation Hospital
- Tsugaru Hoken Medical Co-op Kensei Hospital

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### Contact the FUKUSHIMA EVACUEES

During her visit in Tokyo Prof. Tønnesen visited an evacuation-site for evacuees from the devastating tsunami and earthquake in 2011.

To show your support or learn more about the consequences of the 2011 catastrophe, contact the Kyu-Kisei High School at the address shown below.

All encouragement and support is welcome.

**Contact:**

Kyu-Kisei High School  
598-1 Kisei, Kazu City, Saitama  
Prefecture 347-0105,  
JAPAN

In September, 2012, the International HPH Secretariat was invited to Tokyo, Japan, to present the HPH Network at a Board Meeting and at a contiguous seminar. Professor Tønnesen met with several hospital managers; many of whom were interested in becoming members of the International HPH Network.

The initial steps for the visit were established at the 20th International HPH Conference in Taipei in April, 2012. Here 22 participants represented Japan from various hospitals and universities. At the conference, 5 representatives from the Japan Federation of Democratic Medical Institutions (Min-Iren) were also present. Min-Iren is one of Japan's leading organisations of medical institutions and consists of more than 1700 affiliated health care, nursing care and pharmacy institutions.

As per October, 2012, Japan totals seven HPH members and they have initiated the process of establishing a National HPH Network of Japan. Min-Iren is currently playing a big role in the preliminary collaboration with the International HPH Network and the establishment of a new national network. But as a Japanese network should consist of broad variety of hospitals and health services, Min-Iren is also aware of not attaining a too dominating part in the development of the network. Thus, Min-Iren has begun inviting hospitals from outside Min-Iren to become HPH members and to help prepare the new Japanese National HPH Network.

### Visit to tsunami and earthquake evacuation-site

During the event in Tokyo, Min-Iren delegates and Prof. Tønnesen visited an evacuation-site for evacuees from the devastating tsunami and earthquake, which struck Japan in March, 2011.

The evacuation-site was set in a former high-school in Kazu City, Saitama. Here families (from the area around the Fukushima nuclear plant) have been relocated, while they wait until they can return to their homes.

The task of lifting Japan back up from the horrifying catastrophe will take many years and it has affected all of Japan – both the public and private sectors. Many organisations such as Min-Iren have offered tremendous help, manpower and other supporting activities.

As an outsider in these serious conditions, what is striking is the involvement of all volunteers.



Picture taken outside the Fukushima plant by an employee the first week after March 11 2011.  
(Photo: TEPCO / tepco.co.jp)



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Professor Tønnesen tells about her visit at the site:

'My impression was that there had been taken extremely good care of the evacuees and that the acute situation had been handled with outmost care from all involved parties. In tragic situations like this, we show our best features by helping fellow human beings and showing compassion. It is admirable to see this enormous degree of humanity displayed by the Japanese people'.

Japan is now facing the challenge of restoring the country, and in this process different measures are needed. Where the acute situation in the first period after the catastrophe called for immediate and direct actions, the long haul of rehabilitation requires a totally different approach.

My experience is that sometimes patients - or in this case the evacuees - may experience a vacuum after the intense focus and attention they were given while the situation was acute. This vacuum may result in a feeling of being overlooked by the surroundings. Besides usual friendly initiatives, greetings and thoughts of third parties may provide the evacuees encouragement and a feeling of support.

Thus, Professor Tønnesen recommends all readers of the journal to consider sending a postcard or letter of support to the many evacuees. You can find the address of the evacuation-site in the info-box at the start of this article

# HPH takes part in the 62nd Session of the WHO Regional Committee for Europe

## About the REGIONAL COMMITTEE

The Regional Committee of WHO Europe is its general assembly, and it is comprised of delegates from the ministries of health of each member country.

The Committee meets once a year to address and discuss strategies and action plans to tackle public health issues on the national and regional levels.

For more information go to: [www.euro.who.int/en/who-we-are/governance](http://www.euro.who.int/en/who-we-are/governance)

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This year, the Regional Committee met in Malta on 10–13 September, where more than 300 representatives of the 53 Member States in the WHO European Region participated.

High-profile participants included WHO Director-General, Margaret Chan; WHO Regional Director for Europe, Zsuzsanna Jakab; health ministers and other high-ranking health decision-makers from the WHO Europe Region. Further attendees included Mr Lawrence Gonzi, Prime Minister of Malta; Her Royal Highness, Crown Princess Mary of Denmark (who is Patron of the WHO Regional Office for Europe); Mr John Dalli, European Commissioner for Health and Consumer Policy; and Mr Yves Leterme, Deputy Secretary-General of the Organisation for Economic Co-operation and Development (OECD). Finally, there were also participants from more than 30 NGOs in official relations with WHO Europe, including the delegation from the International HPH Secretariat.

## Main outcomes

Among the main outcomes of the Regional Committee was the adoption of the region's overarching new health policy, *Health 2020*. The policy focuses on the main health challenges in the 53 countries, such as tackling inequities, cutting expenditures and improving efforts related to noncommunicable diseases (NCDs), including obesity, cancer and heart disease. The policy recommends that European countries address population health through whole-of-society and whole-of-government approaches – something which naturally includes HPH as an important component.



(Photo: visitmalta.com)



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Health 2020 is built on four core priorities:

- investing in health via a life-course approach and via empowerment
- tackling noncommunicable and communicable diseases
- strengthening people-centred health systems, public health capacities and emergency, preparedness, surveillance and response
- creating resilient communities and supportive environments

### Other key outcome were:

- the adaptation of the new European Action Plan for Strengthening Public Health Capacities and Services, which is an integral part of the Health 2020 process
- the adaptation of the new strategy and action plan on healthy ageing in Europe, 2012–2020, aiming to promote healthy behaviour and ensure age-friendly environments for all populations and age groups (the Regional Office's first ever strategic document on this important topic)
- the Regional Office's new strategy on relations with countries and policy on its geographically dispersed offices, designed to improve WHO's collaboration with Member States
- the WHO reform for a healthy future, including discussion by Member States' representatives of the WHO programme budget and how it can be adjusted to the requirements for the Organization's reform.

### HPH plays important part

The International HPH Secretariat at the WHO-CC, Clinical Health Promotion Centre in Copenhagen took

part in the Regional Committee and represented the HPH Network. HPH attended as an NGO in official relations with WHO - an official relation underpinned by the 2010 Memorandum of Understanding between WHO and HPH.

HPH delivered statements for the Regional Committee on how to achieve better health gain for patients, staff and communities. As tangible and practical examples, HPH had also contributed with background materials and case reports to Health 2020 and the European Action Plan for Strengthening Public Health Capacities and Services.

Throughout, HPH has placed its main emphasis on the point that, just like national and local governments, hospitals too have important roles to play in promoting health and preventing disease – and HPH is truly a testament to the fact that there is more than ample will, evidence and interest. By scaling up ongoing efforts, the statements point out, HPH can help bridge public health with primary and secondary health sector as well as health sector and social sector.

HPH finally urged all ministries and delegates to take this message home, to look at what can be done to strengthen practical efforts at hospitals and health services in their countries and, of course, to support the European HPH networks in making their vital difference towards improving health promotion deliverables for the benefit of patients, staff and communities.

## Up-coming HPH events

**WHO HPH Autumn School - Bandung Indonesia (Oct 29 – Nov 1, 2012)**

**WHO HPH Summer School - Gothenburg Sweden (May 20 – 21, 2013):**  
Two events: HPH workplaces & N/R coordinators Workshop

**International HPH Conference 2013 - Gothenburg Sweden (May 22 – 24, 2013)**

**HPH Newcomers' Workshop - Gothenburg Sweden (May 25, 2013)**

**WHO HPH Management School - Copenhagen & Malmö (May 15-16, 2013)**  
(A visit to WHO Europe is included)

*Sign-up and further information is available at [www.hphnet.org](http://www.hphnet.org)*



## News from the International HPH Network



# HPH Member update

### The International HPH Network now totals 895 members

The growth-related goal of the Global HPH Strategy 2011-2013 is to reach member number 1000 in 2013.

If your hospital or health service is interested in joining the International HPH Network, go to [HPHnet.org](http://HPHnet.org) and find more information about what HPH can do for your organisation and why health promotion in Hospitals and Health Services is vital for the improvement of health for patients, staff and community.

In the 'Members' section at [HPHnet.org](http://HPHnet.org) you will find all information required for membership.

For further questions about the HPH Network, feel free to contact the secretariat: [info@hphnet.org](mailto:info@hphnet.org).