Assessing Food Safety Risks using Food Consumption Data

ILSI SEA Region brings together nutrition and food safety experts in Southeast Asia to discuss how food consumption data can be used for exposure and risk assessment.

Vitamin D New findings on health benefits, status and requirements in Southeast Asia

Food Labels and Claims Impact on Consumer Behavior

Building Healthy Communities through Prevention Strategies and Multi-sectorial Partnerships
Bringing together scientists and experts from different stakeholder groups – whether they are from industry, government or academia – has been ILSI’s unique approach to addressing public health challenges and facilitating science-based decision making.

These public-private partnerships also provide platforms for experts from differing backgrounds and expertise areas to meet, exchange knowledge and information, expand their network, and find new ways to tackle health issues. One example of how ILSI SEA Region facilitates such cross-fertilization of ideas is our activities relating to the use of food consumption data for exposure and risk assessment. Such activities bring together nutrition and food safety experts to discuss how data traditionally used for nutrition purposes can be important for ensuring food safety too. Our Seminar and Workshop on Food Consumption Data and Exposure Assessment, held in October 2011, was also a joint collaboration with WHO, FAO and ASEAN. The success and constructive outcomes of these meetings are once again, testament to ILSI’s partnership approach.

Other collaborative activities featured in this issue of Science InSight include the Seminar on Vitamin D and Health held in Indonesia, as well as the 2nd ILSI-CHIP Symposium on Community Health and Wellbeing through Multi-sectorial Partnerships held in Australia.

I am also pleased to highlight our scientific publications, which help to disseminate outputs from our programs, as well as relevant scientific and regulatory updates from our dynamic region. Besides our meeting reports which are published in peer-reviewed journals such as Asia Pacific Journal of Clinical Nutrition, we have launched the new ILSI SEA Region Report Series, which will provide insightful information on our key research projects. The first Report in this series provides an overview on the “Regulatory Status of Micronutrient Fortification in Southeast Asia”.

I hope you enjoy the reports and summaries of our activities shared in this issue of Science InSight, and I look forward to your continued support and participation in our programs in 2012!

From the Executive Director

Boon Yee Yeong
Executive Director
ILSI Southeast Asia Region

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Announcement: 6th Asian Conference on Food and Nutrition Safety
Assessing Food Safety Risks using Food Consumption Data

Consuming foods that may contain particular chemical or microbial hazards poses potential risks to human health, and is a key concern for public health officials. One of the methods used to estimate such potential risk, is exposure assessment – where food consumption data is combined with data on the concentration of foodborne hazards found in different types of foods, to calculate the likelihood of exposure of the population to these hazards and subsequently determine the possible health consequences. As such, having accurate food consumption data for exposure assessment is essential as such data can have a significant impact on the final exposure and risk estimates.
In Southeast Asia, food consumption data has traditionally been collected by nutritionists for the main reason of fulfilling nutrition-related needs, such as for conducting assessments on the nutritional adequacy of the diet for different populations. However, Southeast Asian countries have, in recent years, been rapidly developing their capacity to conduct food safety risk assessment, which includes exposure assessment, to meet the twin challenges of protecting their citizens from foodborne hazards and facilitating fair trade in food products at regional and international levels. Such developments have made it necessary for nutritionists and food safety professionals to work together in developing food consumption data that can also be used for exposure assessment purposes.

ILSI SEA Region’s Role in the Development of Food Consumption Data for Exposure Assessment in Southeast Asia

Over the last few years, ILSI SEA Region has been playing an active role in trying to bring the food safety and nutrition communities together on this topic. It has organized a number of meetings and workshops focusing on this area:

- In 2003, ILSI SEA Region together with the Food and Agriculture Organization of the United Nations (FAO), launched the inaugural discussion on this topic at the Workshop on ‘Food Consumption Surveys in Developing Countries: Future Challenges’ held in Chiang Mai, Thailand.

- This was followed in 2004 by the Workshop on ‘Food Consumption Surveys: Dietary and Exposure Assessment’, which was also held in conjunction with the 4th Asian Conference on Food and Nutrition Safety in Bali, Indonesia.

- In 2008, a Workshop on ‘Regional Collaboration of Food Consumption Surveys in Southeast Asia for Dietary and Exposure Assessment’ was held during the 5th Asian Conference on Food and Nutrition in Cebu, Philippines.

- In 2009, the Initiation of Project on Strengthening ASEAN Risk Assessment Capacities: Food Consumption Data by ILSI with FAO and FSQD, Ministry of Health, Malaysia.

- In 2011, Seminar and Workshop on ASEAN Food Consumption Data and Exposure Assessment, Malaysia.

Workshop on Food Consumption Surveys in Developing Countries: Future Challenges, Thailand

Workshop on Regional Collaboration of Food Consumption Surveys in Southeast Asia for Dietary and Exposure Assessment, Philippines

Seminar and Workshop on ASEAN Food Consumption Data and Exposure Assessment, Malaysia

2003

2004

2008

2009

2011

L to R: Dr. Chea Mary, Ministry of Health, Cambodia; Mr. Pisan Pongsapich, National Bureau of Agricultural Commodities and Food Standards, Thailand; Ms. Virachnee Lohachoompol, National Bureau of Agricultural Commodities and Food Standards, Thailand; Ms. Stephanie Chua, Community Nutrition Division, Ministry of Health, Brunei Darussalam; Ms. Weeraya Kampanit, Mahidol University, Thailand; Ms. Jiraratana Thesasilipta, Food and Drug Administration, Thailand
In 2009, ILSI was approached by FAO in relation to a request by the ASEAN Expert Group on Food Safety (AEGFS), one of the technical working groups of ASEAN that focus on food safety issues, to provide technical assistance for developing common food consumption data to be used for exposure assessment at the regional level. In an effort to consolidate its longstanding efforts in this area, ILSI Southeast Asia Region, in cooperation with FAO and the Food Safety and Quality Division, Ministry of Health, Malaysia, initiated the **Project on ‘Strengthening ASEAN Risk Assessment Capacities: Food Consumption Data’**. The project was supported through the ILSI-FAO Collaborative Framework, and obtained funding from the ILSI International Organizations Committee. As part of the project, Dr. Philippe Verger from the World Health Organization (WHO) and Dr. Ruth Charrondiere from FAO were engaged as the main technical consultants, while Assoc. Prof. Mirnalini Kandiah from University Putra Malaysia and Mr. Jamal Khair Hashim from the Food Safety and Quality Division (FSQD), Ministry of Health Malaysia, served as the regional experts.

In preparation for a workshop to discuss plans for developing ASEAN food consumption data for exposure assessment, ILSI SEA Region helped to coordinate the collection of information on national systems for food consumption surveys and data, as well as a list of exposure assessments and risk assessments completed by ASEAN countries using their existing data. The information gathered served as an inventory for sources of food consumption data available to develop a common ASEAN food consumption database, and also provided insight into the past experiences of countries in using such data for exposure assessment. Once all the information was consolidated, the workshop was planned to be held in Kuala Lumpur, Malaysia, on October 10-13, 2011 at the Crowne Plaza Mutiara Hotel.

**Seminar on Food Consumption Data & Exposure Assessment**

Prior to the workshop, a half-day seminar open to the public was organized on October 10, 2011 for the purpose of reaching out to a wider audience of nutritionists and food safety professionals on this important topic. Close to 130 participants from government, industry and academia attended the seminar.

The seminar was organized into two sessions – the first focusing on issues related to food consumption data, and the second dealing with exposure assessment. In the first session, Dr. Ruth Charrondiere provided an overview on what is food consumption data, how it is collected, as well as what it is used for in both nutrition and food safety. This was followed by Asst. Prof. Vongsvat Kosulwat and Asst. Prof. Nipa Rojoongwasinakul from Mahidol University, Thailand, who elaborated on the requirements for conducting food consumption surveys to meet exposure assessment needs. Ms. Weeraya Karnpanit further illustrated the points made by her colleagues from Mahidol University by describing a case study on a prior initiative to assess consumption of specific food ingredients in four ASEAN countries.

During the second session on exposure assessment, Dr. Philippe Verger provided an overview of the process for conducting exposure assessment, as well as on the sources of food consumption data available at the international level. Mr. Mazlan Isa from FSQD, Ministry of Health, Malaysia, also provided a lecture on the other necessary ingredient for exposure assessment – food concentration data, and described the various sources from which such data can be acquired. Dr. Roy Sparringa, from the National Agency for Drug and Food Control, Indonesia, subsequently shared a case study on exposure of food additives consumed by school children, and further explained how Indonesian authorities manage food safety risks. Finally, Prof. Son Radu from University Putra Malaysia gave his take on exposure assessment from the perspective of a microbiological risk assessor, and pointed out the types of consumption data that is relevant in conducting microbiological risk assessments.

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**Project on Strengthening ASEAN Risk Assessment Capacities: Food Consumption Data**

Dr. Philippe Verger, WHO, gives an overview of exposure assessment

Dr. Vongsvat Kosulwat, Mahidol University, Thailand
After the seminar, food safety and nutrition experts from 9 out of the 10 ASEAN countries, including Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Philippines, Singapore, Thailand and Vietnam, gathered for the workshop to discuss how to develop common food consumption data that could be used by all countries in the region for exposure assessment. Each country started off by explaining their national food consumption data collection system, including the methodologies used as well as challenges and limitations that they faced in gathering the data.

Many of the countries (Brunei Darussalam, Malaysia, Singapore and Thailand) used a semi-quantitative food frequency questionnaire (FFQ) in combination with 24-hour dietary recall for gathering data at the individual level. Others used 24-hour dietary recall as the main method (Cambodia, Indonesia, Philippines and Vietnam), sometimes supplemented with a FFQ (Cambodia and Vietnam). Finally, although Lao PDR does not possess national food consumption data at the individual level, it does collect it at the household level using the household budget method.

On the second day, government and academic risk assessors from the countries also presented case studies on exposure assessments and risk assessment previously carried out on hazards ranging from chemical contaminants such as aflatoxins, acrylamide and heterocyclic amines, to microbiological pathogens such as *Listeria monocytogenes* in raw vegetables and *Bacillus cereus* in fried rice. The workshop participants subsequently broke up into groups to discuss in detail what types of consumption data would be needed for exposure assessment, and could be common methodologies applied across the region to collect such data. The experts also worked to develop a common list of food categories that could be used as a basis to input existing national food consumption data as well as for preparation of future surveys.

Although the experts agreed that it was necessary to collect food consumption data at the individual level, they differed on the exact methodology to be used. Some proposed using a semi-quantitative FFQ as the main survey tool, supported by a 24-hour dietary recall for validation purposes, since this was felt to be more practicable in reality. Others preferred using the 24-hour dietary recall method as the main method, since it provided a more complete picture of total food consumption by the population. There was also debate on how many days of recall would provide the most accurate assessment of usual consumption using 24-hour dietary recall.

The experts were, however, successful in coming up with a list of ASEAN food categories, based on the categories found from the ASEAN Food Composition Tables. It was decided at the end of the workshop to form working groups to continue the work to develop a common ASEAN food consumption database for the categories, as well as to propose the working groups as official ASEAN task forces at the next meeting of the ASEAN Expert Group on Food Safety. The working groups will continue to develop the common database over the next one year and if it is completed in time, this could be used to conduct a regional exposure assessment in conjunction with the upcoming 6th Asian Conference on Food and Nutrition Safety to be organized by ILSI SEA Region in November 2012.

ILSI Southeast Asia Region has been included in the working groups, and will remain an active supporter of the ASEAN effort to develop food consumption data for exposure assessment.
Role of Vitamin D in Health

With increasing data on vitamin D deficiency in many populations, as well as emerging interest in the role of vitamin D beyond skeletal health, ILSI SEA Region organized a Seminar on Vitamin D and Health on November 30, 2011. The range of topics covered by the seminar included vitamin D status and deficiency in Southeast Asia; setting of the requirement of vitamin D and implementing strategies to improve adequacy, such as through dietary sources and supplementation; as well as state-of-the-art knowledge on the health benefits of vitamin D, and new findings associated with skeletal and non-skeletal disease risks.

The seminar was co-organized with the Southeast Asian Ministers of Education Organization Regional Center for Food and Nutrition (SEAMEO RECFON), and the Southeast Asian Food and Agricultural Science and Technology (SEAFAST) Center. Held in Hotel Borobudur Jakarta, Indonesia, the seminar was attended by about 80 participants, including government officials and key regulators from Southeast Asia, as well as representatives from the academia and private sector.

Chaired by Dr. Judhiastuty Februhartanty, Deputy Director for Program of SEAMEO RECFON, the first session of the seminar focused on Vitamin D Status in the Region. Prof. Geok Lin Khor, Professor of Nutrition & Dietetics at the International Medical University, Malaysia, gave the opening paper on Vitamin D Status and Disease Outcomes in the Philippines, which detailed the findings from a study conducted among patients in rheumatology clinics in Manila by Torralba et al. (2011). Vitamin D inadequacy was documented in 75.6% of patients across different sexes and age groups. It was found that the prevalence of inadequacy was higher in patients with inflammatory and autoimmune diseases compared to those with non-inflammatory and non-autoimmune diseases. Dr. Hamijoyo also presented case studies that showed correlations between vitamin D inadequacy and autoimmune diseases, dermato logic conditions such as psoriasis, as well as tuberculosis, with...
The immunomodulatory role of vitamin D as a plausible evidence base. Maternal vitamin D status during pregnancy was also reported to play a role in the onset of osteoporosis in the offspring, thus depicting osteoporosis as ‘a pediatric disease with geriatric outcomes’. The correlations conclusively showed that serum vitamin D determination and monitoring are imperative for both sexes and across all ages.

The last presentation of the session was by Dr. Grace Soon, Head and Chief Nutritionist at the Centre of Excellence (Nutrition), Health Promotion Board, Singapore, with the title Serum Vitamin D Levels in Singapore Residents. A National Nutrition Survey was conducted in 2010, and vitamin D levels of participants were assessed to find out the prevalence of vitamin D inadequacy and its associated risk factors among Singaporean adults. The survey found a prevalence of 23%, an increase from findings in 2004 (18%). Prevalence of inadequacy was significantly higher in females than in males, as well as in Indians and Malays than in Chinese. Also, the survey found an increased risk of inadequacy for obese individuals, people with low levels of exercise, diabetics with poor glycemic control, and younger adults under 50 years old. Dr. Soon elaborated that an upcoming analysis of dietary intake data will provide more insight and help to develop targeted interventions to improve vitamin D status in at-risk groups.

The next session of the seminar, Requirements and Sources of Vitamin D: Challenges in Meeting Adequacy, was chaired by Dr. Atmarita from the Ministry of Health, Indonesia. Prof. Kevin Cashman, Professor of Food and Health at University College Cork, Ireland, presented a paper on Requirement and Measurement: Challenges and Strategies in Meeting Adequacy. The presentation first detailed the measurement of vitamin D status by defining 25-hydroxyvitamin D (25(OH)D) as a status marker, and describing analytical techniques such as immunoassays and Liquid Chromatography Mass Spectrometry (LCMS)/MS. In light of the rise in epidemiological evidence linking vitamin D with non-skeletal diseases, in addition to its well-accepted role in metabolic bone disease, several authorities have begun the process of re-evaluating population reference intakes for vitamin D. Prof. Cashman provided an overview of the evaluation process, such as that undertaken by the North American Institute of Medicine (IOM) and the EURopean micronutrient RECommendations Aligned (EURRECA) network. Different types of vitamin D, circulating 25(OH)D level, and the latitude wherein Randomized Controlled Trials (RCTs) were conducted, are a few of the factors to consider - it is clear that recommendations should be country-specific due to many varying factors. Despite new reference values, sub-optimal vitamin D status will remain a major public health issue as there is a substantial gap between requirements and typical dietary intakes. Despite the relative potency of sunshine exposure in comparison with dietary sources, the risk of skin damage and cancer prohibits using the former as a public health measure. Similarly, supplementation as a preventive strategy has until now little evidence of effectiveness, and it may be more useful for high-risk groups than as a population-targeted strategy. More sustainable solutions, namely fortification or other food-based strategies, are therefore needed.

The next presentation was by Dr. Angelika Friedel, senior scientist in the Department of Human Nutrition and Health at DSM Nutritional Products Ltd, Switzerland. The presentation, titled Vitamin D Sources: Are They All the Same, characterized the two types of vitamin D: cholecalciferol (vitamin D3) and ergocalciferol (vitamin D2). When exposed to UV-B radiation, a photosynthetic reaction on the skin produces vitamin D3, a naturally occurring form in humans and animals. Risk factors such as latitude, time spent outdoors, and use of sunscreens, however, restrict its subcutaneous synthesis. Although limited, dietary sources of vitamin D include fatty fish and irradiated foods, with irradiated plant foods such as mushrooms being the major source of vitamin D2. Dr. Friedel highlighted that while both forms of vitamin D are inert, a number of clinical trials have shown that vitamin D3 is more potent in raising and maintaining serum 25(OH)D levels. This can be attributed to its higher binding affinity to the vitamin D binding protein, as well as higher affinity to the vitamin D receptor (VDR). Vitamin D3 has also shown to be more effective in reducing the risk of falls and fractures as compared to vitamin D2.

Mr. Geoffry Smith, President of ILSI SEA Region as well as Chairman of the Essential Micronutrients Foundation, proceeded with a paper on Vitamin D Supplementation and Fortification: Challenges in Implementation. Mr. Smith explained that the assumption that equatorial nations would receive adequate sunlight exposure to achieve sufficient vitamin D levels may now be defunct, due to modern lifestyles and increasing time spent indoors. Similarly, good dietary sources such as fatty fish may not provide sufficient amounts of vitamin D to Southeast Asians due to infrequent consumption. Mr. Smith illustrated how fortification of staple or packaged foods or beverages can improve vitamin D status and reduce health care costs and mortality rates in Southeast Asia. Wheat flour and edible oil may serve as suitable fortification vehicles that are consumed in sufficient quantities in the region. Supplementation may also be considered for severe VDD and in cases where fortified foods are not consumed in adequate amounts. Nevertheless, these proposed strategies require more substantiation from national data, regional studies on the health effects of vitamin D, as well as improved testing capabilities, so as to better combat the VDD endemic.

Chaired by Mr. Smith, the last session

Ms. Mana Regina Pedro, Mead Johnson Nutrition, Philippines; Mrs. Boon Yee Yeong, Executive Director, ILSI SEA Region; and Ms. Wanda Roch Wandansari, Mead Johnson Nutrition, Indonesia

Ms. Steffiana Wijaya, ILSI SEA Region, and collaborators from SEAFAST Center, Indonesia

Prof. Kevin Cashman, University College Cork, Ireland, raising questions and recommendations during the seminar
of the seminar, Vitamin D and Health, shared the classical and non-classical health benefits of vitamin D and their scientific basis. The first presentation was Vitamin D and Health Benefits: Skeletal Health and Beyond by Prof. Peter Ebeling from The University of Melbourne, Australia. The presentation first outlined recommendations in Australia, namely vitamin D3 supplementation and sunlight exposure guidelines, backed by solid evidence on the effect of vitamin D treatment in reducing the risk of falls and fracture. Prof. Ebeling presented research findings on VDD and its association with other health outcomes, including type 1 and type 2 diabetes mellitus, and gestational diabetes. It appears that vitamin D treatment also increases insulin sensitivity and reduces the rise of fasting glucose in diabetic patients. Additionally, VDD is associated with a multitude of other non-skeletal conditions, namely autoimmune and infectious diseases, cancer, as well as overall mortality. Prof. Ebeling highlighted the importance of observing serum 25(OH)D levels and treating VDD in diabetic patients, as well as in pregnant women from at-risk groups. However, while metabolic benefits are likely to accrue from treating VDD, more RCTs and scientific evidence are still needed.

Dr. Hataikarn Nimitphong from the Ramathibodi Hospital, Mahidol University, Thailand, next presented on the Role of Vitamin D in Human Adipocytes and Human Brain. Dr. Nimitphong showcased studies that suggest vitamin D may favorably influence the remodeling of adipose tissues via regulation of leptin, and may also possess an anti-inflammatory action via regulation of pro-inflammatory adipokines. These properties support its potential role in reducing obesity, insulin resistance and type 2 diabetes. Epidemiologic studies have revealed that VDD is linked to a number of neurological disorders as well, such as multiple sclerosis, schizophrenia and Alzheimer’s disease, in addition to neurocognitive and neuropsychiatric diseases.

Based on the presentations of Prof. Ebeling and Dr. Hataikarn, it could be gathered that the presence of VDR throughout the human body, including islet cells, adipose tissues and brain tissues, may contribute to the association between VDD and many non-skeletal diseases.

Prof. Woon-Puyah Koh from the National University of Singapore provided insight on VDR and its influence on disease outcomes at the cellular and genetic level. Her presentation, Vitamin D Receptor Gene Polymorphism and Colorectal Cancer Risk, illustrated VDR as a pivotal mediator for the cellular effects of vitamin D. Polymorphism of VDR gene, which affects its structure and activity level, has been shown to affect colorectal cancer risk. Based on a case-control study nested within the population-based prospective cohort of middle-aged and older Chinese in Singapore, it was demonstrated that individuals carrying the low-activity genotype have an increased risk of colorectal cancer, with dietary calcium and fat intake as modifying factors. Among those with either low calcium or low fat intake, the risk for colorectal cancer increased significantly in a gene-dose-dependent manner. For subjects with higher dietary fat or calcium intake, on the other hand, there was no evidence of a VDR genotype-colorectal cancer association. Prof. Koh concluded that in addition to validating the role of vitamin D in colorectal cancer etiology, the study suggested that vitamin D requirement and effects in individuals may be modified by genetic polymorphisms as well as dietary factors.

The next speaker, Dr. Drupadi Dillon from University of Indonesia, presented further evidence on the VDR gene and its influence on non-skeletal disease outcomes. With the scientific basis that polymorphism of the VDR gene affects the role of vitamin D in activating the immune process against tubercule bacillus (TB), Dr. Dillon’s presentation, Vitamin D and Immunity: A Case Study on Tuberculosis in Indonesia, showcased findings from a study that investigated the vitamin D status and VDR genotype of TB patients in Indonesia. Observations included a higher prevalence of VDD among TB patients compared to normal subjects. Additionally, there was a higher risk for vitamin D insufficiency and deficiency for the former group. There was, however, no significant difference in sunlight exposure and vitamin D intake in TB patients and healthy subjects. Due to the potential immune-regulatory function of vitamin D, VDD was deemed a severe problem amongst TB patients in Indonesia. Dr. Dillon added that a study on polymorphism with a larger sample size is needed, and proposed a study on the effect of vitamin D supplementation on TB patients.

The last presentation was given by Dr. Maryantoro Oemardi from the Melania Mother and Children Hospital, Bogor, Indonesia, titled Vitamin D and Geriatrics: The Indonesian Perspective. Dr. Oemardi illustrated the decline of vitamin D status with age, which can be attributed to lower dietary intake and diminished sunlight exposure. Dr. Oemardi outlined a sun-exposure study performed in Jakarta and Bekasi, Indonesia, which found that sun exposure on the face and arms 3 times a week, for 6 weeks, improved serum vitamin D levels of elderly Indonesian women. Sunlight exposure was thus deemed effective in improving vitamin D adequacy and could contribute to the classical role of vitamin D in musculoskeletal health. Dr. Oemardi also presented evidence on the positive correlation of serum 25(OH)D and muscle function in elderly Indonesian women, with the presence of VDR in muscle tissues as a potential scientific explanation.

At the end of the seminar, a panel discussion saw further discussion and input from representatives from the academia, industry, as well as government sectors, and a summing up of the research gaps and strategies to combat VDD endemic in Southeast Asia.
Science InSight (SI): ILSI Japan CHP has initiated many community-based programs with the aim of improving public health. Could you share with us ILSI Japan CHP’s unique approach to developing and implementing such programs?

Mr. Takashi Togami (TT): ILSI Japan CHP has initiated programs focusing on delivering benefits to at-risk populations. As a global scientific organization, ILSI’s strength is its strong base in science and its efforts to improve public health through science-based decision making. However, ILSI can also contribute directly to promoting the health of at-risk populations and communities. At ILSI Japan CHP, we aim to demonstrate that ILSI can implement community-based programs that directly benefit at-risk populations by utilizing ILSI’s strong science base, and establishing a multi-disciplinary approach.

SI: What are some of the key health promotion programs that ILSI Japan CHP currently carries out?

TT: ILSI Japan CHP has been conducting three projects, namely Project IDEA (Iron Deficiency Elimination Action), Project SWAN (Safe Water and Nutrition) and Project PAN (Physical Activity and Nutrition). Project IDEA has been implemented through the iron fortification of staple foods, such as iron fortification of soy sauce/fish sauce in Vietnam and Cambodia, and iron fortification of rice in the Philippines and Vietnam.

Project SWAN aims to establish workable models for sustainable supply of clean water and health communication in communities in rural areas. The project has been conducted for 6 years in Vietnam, and have developed successful and sustainable models by improving local water treatment operations, as well as the health status of children in areas such as diarrhea and food hygiene practice.

Project PAN has been conducted for more than 10 years in Japan. Under this project, two different programs are currently underway – TAKE 10! for the elderly and LiSM 10! for adults. TAKE 10! for the elderly supports healthier longevity among the elderly, and helps to reduce costs of the national health care program by combining appropriate physical activity with proper dieting habits. LiSM 10! for adults supports improvements of lifestyle-related diseases in work places.

SI: In recent years, ILSI Japan CHP has initiated several health promotion programs in Southeast Asian countries, such as Project IDEA to address iron-deficiency anemia, and Project SWAN to provide safe water and nutrition. Could you share with us on why ILSI Japan CHP has been active in this region, and the impact that these programs have had for the local communities?

TT: Dr. Alex Malaspina, the first President of ILSI, established the ILSI Centre for Health Promotion with the objective to develop programs that could bring direct public health benefits to at-risk populations. In Asia, there are many developing countries where public health improvements are much needed for at-risk populations. Thus, I have always believed that ILSI Japan CHP has a key role to play in developing community-based health promotion programs, especially in the Southeast Asia region.

While ILSI Japan CHP cannot, of course, solve public health issues on a
nationwide basis in a short time, we can however develop and provide workable models that help to implement public health programs at a national level. For example, Project SWAN in Vietnam has successfully implemented three community-based models over three years in its initial phase. By 2012, 16 communities will benefit from the model we have developed and continue to implement. We aim to expand the program to a whole province by 2015, and I expect that the impact will exponentially increase with support of local administration.

SI: What, in your experience, are the most important success factors for community-based health promotion programs?

TT: In order to go through all processes from research to implementation, we need a variety of expertise ranging from science to business. ILSI emphasizes Tripartite Partnership between Industry, Government and Academia. While this Tripartite Partnership is key, ILSI Japan CHP also believes that in implementing community-based programs, a “Four Party Partnership” model, where the inclusion of Community is also very important. Having the participation of communities in a program as an equal partner is critically important to the program’s success. To make the “Four Party Partnership” successful, I think that the most important factor is vertical and horizontal communication among parties. As a program moves on from research to implementation, many players from different partners join and leave the program. Cross-sectional communication and coordination is the key to maximizing outputs of the team to attain the program’s goal. All stakeholders need to share the same goal, objectives, activities and outcomes with the communities. Such an approach will ultimately allow the communities to take ownership and responsibility of the program.

SI: What are some of the future plans for ILSI Japan CHP, and what is your vision for ILSI Japan CHP’s role and contributions to ILSI’s mission to improve public health?

TT: Over the past three decades, ILSI has succeeded in establishing its strong base of science, but I think ILSI needs to enhance programs that benefit our society directly by utilizing outcomes of science. I expect that ILSI Japan CHP can play a role in achieving this goal by continuing to develop and implement community-based programs for the benefit of populations across Asia.
Nutrition Labeling and Claims

ILSI SEA Region Helps to Develop Capability in Nutrition Labeling and Claims Regulations, and Considers the Impact of Food Labels on Consumer Behavior

In the second half of 2011, ILSI SEA Region organized two activities which addressed different aspects in the area of nutrition labeling and claims. In Vietnam, a fast developing country and economy in Southeast Asia, ILSI SEA Region assisted the Vietnamese authorities to develop capability among government regulators and officials. While in Australia, a seminar was held to examine the role and impact of food labels on public health promotion and consumer behavior.
Training Workshop on Nutrition Labeling and Claims in Vietnam

On August 9, 2011, ILSI SEA Region in collaboration with the Vietnam Food Administration (VFA) conducted a 1-day National Training Workshop on Nutrition Labeling and Claims to provide participants with an overview of the development and status of international and regional nutrition labeling and claims regulations. The meeting also shared the scientific substantiation required for different levels of claims in selected countries and regions.

Held at the Fortuna Hotel in Hanoi, Vietnam, the workshop was well-attended by approximately 50 participants comprising VFA staff, provincial food and nutrition officers, representatives from Vietnam Codex office, members of the nutrition association, as well as representatives from academic institutions and food industry.

The workshop was opened by Dr. Nguyen Cong Khan, Director of the Vietnam Food Administration, who explained that Vietnam is in the process of developing regulations on nutrition labeling and claims, and that the country would benefit from learning the approaches and systems used by various countries. A representative from VFA then shared and highlighted some of the key features of Vietnam’s newly drafted regulations on food and nutrition labeling.

Ms. Pauline Chan, Director, Scientific Programs, ILSI SEA Region was the key presenter who provided an overview of Codex Recommendations and Guidelines on Nutrition Labeling and Claims. In addition, she also shared in detail the nutrition labeling and claims regulations of key ASEAN countries, as well as some of the challenges faced by both regulatory agencies and industry when developing the nutrition labels and claims. Ms. Chan emphasized the importance of developing a proper regulatory framework when evaluating claims using evidence-based scientific approach. Lastly, she reviewed the scientific substantiation guidelines and recommendations by Codex, and those used in the US, EU as well as key ASEAN countries.

Food Labeling and Consumer Behavior Seminar in Australia

ILSI SEA Region Australasia held a one-day seminar on Public Health Promotion and Consumer Behavior: The Role of Food Labeling, on October 11, 2011 in Sydney, Australia. The objectives of the seminar were to explore and debate the complexity of food labeling within a health policy context, and to understand the challenges in evaluating the effectiveness of food labeling.

An introduction by Dr. Dave Roberts, President of ILSI SEA Region Australasia, provided a background on ILSI’s worldwide mission to improve public health and well-being by providing a platform for scientific discussion between experts from academia, government and industry. Dr. Roberts stated that now was the perfect time to be debating food product labeling in view of the recommendations contained in the ‘Labeling Logic’ policy review.

Economic and consumer behaviour expert Prof. Simone Pettigrew, from the University of Western Australia’s business school, was the first to speak on the Potential Policy Framework of Food Labeling. Prof Pettigrew outlined the major recommendations contained in ‘Labeling Logic’, the final report of COAG’s Food Labeling review panel, of which she was a member. Prof.
Pettigrew noted the strong emphasis on public health taken by the review, and some key issues it had to address within its 61 recommendations; such as the need for labeling to be realistic, attractive and easily visible for an ageing population. She reported that 4 in 5 low socioeconomic status households support a front of package traffic light system, and that such a system would be less necessary in households with higher nutritional knowledge. In closing, she emphasized the need for a single agency to provide a cohesive point of contact and reliable information on product labeling for both industry and consumers.

Mr. Chris Preston of Legal Finess presented an opposing view to several of the recommendations presented in ‘Labeling Logic’ in his paper titled Blewitt's Brave New World. Mr Preston questioned the growing trend of public health responsibilities being transferred to industry rather than being managed by government, resulting in more and more public health issues being given ‘label’ solutions. He argued that food labeling practices should be based on evidence of effectiveness and raised the question that since no evidence currently proves food labeling has a beneficial influence on population health, food labeling runs the risk of doing no more than demonising ‘bad foods’, making consumers feel worse about the food choices they make and costing manufacturers thousands of dollars in the process. Mr. Preston finished by saying that governments would be better off focusing on more fundamental issues such as food security.

Assoc Prof. Cliona Ni Mhurchu from the University of Auckland Clinical Trials Research Unit, presented a paper on ‘Is there evidence that food labeling has driven consumers to better food choices?’ Prof. Mhurchu started her talk by acknowledging that nutrition labeling is not the ‘silver bullet’ in better food choices but rather part of a multi-faceted approach. She presented research on nutrition labeling in both restaurant and supermarket scenarios, in neither of which settings proved labeling had any effect on consumer food choices. In contrast, there were more robust studies which indicated that very small but significant changes occur when food labeling is accompanied with extensive nutrition education.

This has potential for a large impact at population level. The problem remains that there is a lack of good evidence of effectiveness, but newer technologies such as smart phone applications and virtual supermarkets may prove useful in future research.

Dr. Josephine Wills, Director General of the European Food Information Council, provided a European perspective on food labeling and consumer food choices. Through a paper on ‘Methodologies and Challenges of Research in Nutrition Labeling for Health Promotion’, the EU funded ‘Food Labeling to Advance Better Education for Life’ (Flabel), Dr. Wills reported on research to determine what nutrition information labeling can achieve in consumer food choices. Research showed that 90% of consumers look at price and use by date, while the nutrition information is looked at by about 50% of consumers. Consumers generally understand Guideline Daily Amounts, but look primarily at calorie and fat content. Dr. Wills confirmed that respondents who already had an interest in nutrition were more likely to read nutrition labels, and that consumer education has the biggest impact on success, but that we still don’t know how much influence nutrition information has on people’s choice.

Ms. Michelle Gosse, senior social scientist and acting section manager for Consumer and Social Sciences at FSANZ, spoke about the practicalities of research into food labeling and consumer behavior, specifically on the use of consumer behavior for predicting likely effects of food labeling changes. One of FSANZ’s objectives in consumer research is to ensure there are no adverse effects from food products for marginalized consumer groups, such as low income, low education, children and frail elderly consumers. Barriers to research include the high expense of consumer based research, the tendency for subjects to behave in a way more socially desirable in observation and survey studies, the use of univariate analysis when regression and multivariate analysis is closer to the truth and the tendency of researchers to make sweeping generalizations beyond their own data in discussions. In a FSANZ consumer attitude survey, approximately 50% of people used a nutrition label at first purchase, and lack of time was reported as the biggest barrier to reading nutrition labels.

Mr. Christopher Zinn, Director of Campaigns and Communications at CHOICE, presented on ‘Consumer Perspective – Is It Just a Right-To-Know Issue?’ Mr. Zinn believed that more package information is not necessarily useful but rather can become distracting and confusing for consumers. He was of the view that information that can be interpreted at a glance, such as a traffic light system, is of most use to consumers.

Mr. Bill Shrapnel, consultant nutritionist and one of Australia’s most experienced dietitians, gave a presentation titled ‘Is Labeling A Driver To A Healthier Food Supply: Insights From Yellow Spreads’. He advised that before nutrition information on food packages is adopted, it should be necessary to take a step back and re-evaluate the nutrition principles on which food labels are based. Mr. Shrapnel used examples of trans fats in margarine in the mid 1990’s and the Heart Foundation Tick. Companies were obliged to reduce trans fats in margarine to maintain the Heart Foundation Tick. Similarly he believed front of pack labeling had the potential to drive food innovation, however whether it will drive changes in population health depends on criteria. He claimed nutrition information on salt and saturated fat would be useful, while information on total fat and sugar would not. A better method would be to look at nutrient density to assign appropriate criteria in food labeling.

Dr. Geoffrey Annison from the Australian Food and Grocery Council (AFGC) presented on the ‘ Appropriateness of Legislation for Health Promotion in Food Labeling’. Dr. Annison stated that 30% of food is now eaten outside the home and as such the AFGC has supported energy declarations on menus, but is critical of mandatory labeling due to a lack of scientific research which demonstrated that food labeling has a significant impact on obesity. He was of the view that no single format of labeling has been proven to lead to beneficial health outcomes.

The seminar highlighted the different views and lively debate that the issue of food labels raises in stakeholders ranging from government, industry, private consultants, non-governmental organizations and consumers.
Addressing the Double Burden of Under- and Over-nutrition among Infants and Young Children in Thailand

ILSI SEA Region has recently completed a survey on the nutritional status of pregnant and lactating women, infants and young children in Southeast Asia and China. These findings, together with the latest updates on infant, young child and maternal nutritional and health status, as well as relevant health policies in Thailand, were shared during ILSI SEA Region’s Seminar on Infant and Young Child Nutrition: ‘Addressing Double Burden of Under- and Over-nutrition in Thailand’ held on September 13, 2011, at the Imperial Queen’s Park Hotel, Bangkok, Thailand.

The seminar also helped to identify key nutritional issues affecting optimal growth in Thailand, such as micronutrient deficiencies, obesity, etc, and shared relevant experiences, approaches, strategies and programs from regional countries, including Indonesia, Philippines and Vietnam, to address the double burden of over- and under-nutrition.

The seminar started off with papers on infant, young child and maternal health issues in the global and regional scenes. Prof. Emorn Wasantwisut, a senior advisor of the Institute of Nutrition, Mahidol University (INMU), whose research focuses are on micronutrients and child development, presented a paper on ‘Current Infant and Young Child Nutrition Issues – Global and Regional Perspectives’. Prof. Wasantwisut outlined the global burden of maternal and child under-nutrition and its effect on mortality, wasting, stunting, underweight and overweight rates, as well as micronutrient deficiency among children worldwide. In the Asian context, the highest prevalence of malnutrition is evident in South Central Asia. Under-nutrition brings forth short- and long-term effects; for instance, under-nutrition may lead to poor brain development and progressively, compromised cognitive and education performance. Prof. Wasantwisut also described recent programs implemented to tackle these global burdens. The ‘1,000 days’ program, for example, was launched to promote sufficient nourishment of children during the ‘unique window of opportunity’ between pregnancy and the age of two. The Scaling Up Nutrition (SUN) Framework strategically addresses this 1,000-day window through evidence-based solutions.

Prof. Parul Christian, a professor in Johns Hopkins University whose research focus is the role of nutrition in influencing maternal, infant and child health, survival and function in the developing world, gave a presentation on ‘Impacts of Maternal Nutritional Interventions on Short and Long Term Health, Survival and Function’. The presentation reviewed evidence from randomized controlled trials of maternal nutritional interventions on their outcomes in child and maternal health. Short-term outcomes include birth outcomes, neonatal and infant morbidity and mortality, as well as maternal health outcomes; whereas long-term outcomes include offspring growth, cardio-metabolic health, and organ, cognitive and motor functions. Prof. Parul highlighted the positive effect of maternal iron supplementation in enhancing birth weight and possibly gestational duration, as well as that of antenatal iron-folic acid supplementation in reducing child mortality and improving motor functioning. Her presentation also stressed the need for more long-term cohort studies to evaluate the role of nutritional interventions in improving maternal and reproductive health outcomes, especially those in the Southeast Asian context.

Prof. Theresa M Talavera, Director of the
Institute of Human Nutrition and Food in the University of the Philippines Los Baños (UPLB), presented a paper on ‘Infants, Young Children and Maternal Nutrition: A Review of the Situation in Selected Asian Countries’. Prof. Talavera’s work includes research on complementary feeding practices, food security and planning. The paper gave an update on the current nutrition situation of infants and young children in the 10 ASEAN Countries, as well as in China. Initial results of the study showed: 1) disparities in the availability of nutrition data across countries for both children and women, hence limiting a full description of the nutrition situation in the region; 2) high prevalence of utilizing different nutrition indices among children; and 3) poor infant and young child feeding practices that contribute to the malnutrition problem. The monitoring and surveillance systems implemented by different countries, as well within a country, also vary. To better identify and tackle the nutritional problems prevalent in the younger population of the region, recommendations were made, including regular assessment of the nutrition situation of infants, young children and women, as well as synchronizing the conduct of surveys and harmonization of health indicators.

The seminar next covered papers on the infant, young child and maternal nutrition and health status, feeding practices, and related governmental programs in Thailand. Prof. Pattanee Winichagoon, a professor from INMU with a research focus on interventions to improve micronutrient status related to anemia in women and children, presented her data on ‘Current Nutritional and Health Status of Pregnant and Lactating Mothers, Infants and Young Children in Thailand’. Data shows a marked improvement in the nutritional status of Thai infants and young children in recent decades, due to effective community-based nutrition programs. Despite this, the prevalence of low birth weight and marginal micronutrient deficiencies are still significant. In addition, low rate of exclusive breast feeding and inappropriate infant feeding practices are a cause of concern. Recent challenges also include increasing numbers of overweight kindergarten and school-aged children in urban areas, as well as of pregnant women with gestational diabetes. To address the double burden of malnutrition in Thailand, it is recommended that the on-going Maternal Child Health (MCH) program in Thailand is evaluated, and that special attention is paid to socio-cultural, economic and lifestyle factors affecting breast feeding and complementary feeding practices.

Prof. Umaporn Suthutvoravut, an Associate Professor of Pediatrics in Ramathibodi Hospital, Thailand, proceeded with a paper on ‘Breastfeeding and Complementary Feeding Practices in Thailand’. Her presentation included local statistics on breast feeding rates and undernourished children, food and nutrient intakes of infants and young children segregated by age and region, and social indicators on the effectiveness of complementary feeding. Recent data showed that central Thailand demonstrates the lowest percentage of infants who were exclusively breastfed for 6 months and up to 12 to 23 months. It was also found that central Thailand had the lowest percentage of special food preparation for children aged 1 to 5 years. Prof. Suthutvoravut’s presentation showcased recommendations made by the Ministry of Public Health on designing optimal complementary feeding practices, and shared the
method of linear programming to plan Food Based Dietary Guidelines (FBDGs) for infants and young children.

The final speakers who presented data from Thailand were from the Nutrition Bureau (Department of Health) of the Ministry of Public Health. Dr. Kitt Larpombatsiri and Mrs. Sujit Saleepan, a medical physician and a nutritionist, respectively, gave a presentation titled ‘Current Policy, Action Plans and Ongoing Programs for Maternal and Child Health in Thailand’. The paper introduced and evaluated the national programs spearheaded by the Ministry, namely those concerning MCH and Iodine Deficiency Control. The MCH program includes breast feeding promotion, nutrition surveillance among pregnant women and children under five, and the Family Love Bonding Project – a project that aims to enhance the mother and child’s health through quality process and services in ante-natal care, childbirth, post-natal care, and child-rearing. The Control of Iodine Deficiency program includes salt iodization, iodization of drinking water in primary schools and households with iodine deficiency, surveillance on Iodine Deficiency Disorders and publicity campaigns. Other nutrition activities are supplementation programs, a campaign to consume food rich in problem elements, fortification of fish sauce, and a healthier food choice for the kids program.

The seminar subsequently covered country experiences with regard to policies and programs for infant and young child nutrition in Southeast Asian region. Dr. Umi Fahmida from the Southeast Asian Ministers of Education Organization Regional Center for Food and Nutrition (SEAMEO RECION), Indonesia, presented on ‘Translating Guidelines into Practices – The Use of Linear/Goal Programming to Specify What to Eat and How Much is Enough’. Linear/goal Programming (LP) translates guidelines on complementary feeding of the breastfed child set by the World Health Organization (WHO) into practices. This is done by formulating and evaluating complementary feeding recommendations (CFR), which take into account cultural food consumption patterns, food acceptability, affordability, and the maximum quantities consumed. Dr. Fahmida highlighted that alternative intervention strategies are required to complement a food-based strategy should optimal combinations of local foods show a low likelihood in ensuring a nutritionally adequate diet after the LP approach is used. Additionally, CFRs should be population-specific and should be tested for their effectiveness at different stratum of the population.

Prof. Corazon Barba, a Professor Emeritus of the Institute of Human Nutrition and Food of the College of Human Ecology, UPLB, presented a paper titled ‘Young Child Nutrition: Issues, Policies and Programs – The Philippines Experience’. The paper shared findings from the Philippines National Nutrition Survey (NNS) in 2008, which illustrated the landscape of under- and over-nutrition among young children, and indicated high prevalence of anemia and vitamin A deficiency in the Philippines. The NNS also showed data on breast feeding and feeding practices for children beyond 6 months of age. It was noted that children have inadequate intake of energy, iron, calcium and vitamin A. Additionally, Prof. Barba shared recent intervention programs and strategies in the Philippines, such as 1) the Maternal, Neonatal and Child Health and Nutrition Strategy – a consolidation of services including pre-pregnancy care, antenatal care, care during delivery and postpartum and postnatal care; 2) the Essential Newborn Care protocol, which promotes early initiation to breast feeding; and 3) a major revision to the Policy and Guide to Micronutrient Supplementation.

Prof. Barba’s presentation was followed by a corresponding paper on relevant policies and programs in Vietnam. Prof. Le Thi Hop from the National Institute of Nutrition (NIN), Vietnam, presented on ‘Young Child Nutrition, Nutrition Policies and Programs – the Vietnamese Experience’. Similarly, Prof. Hop shared data on maternal and fetal malnutrition. Stunting in children under 5 and anemia rates in both children and pregnant and reproductive age women remain as national challenges, while obesity in children is an emerging health problem. Governmental actions, including vitamin A and iron supplementation, have alleviated deficiency problems and related health issues in the past decade. Prof. Hop also illustrated the ways in which the Vietnamese government has built capacity and raised feasibility of nutrition programs, such as through nutrition training in medical and agricultural universities, promotion of breast feeding and proper complementary feeding, as well as by raising the investment budget for such activities. FBDGs were revised in 2006 and implemented nation-wide. The government is also developing the National Nutrition Program 2011-2015, along with several projects: child underweight and stunting control, child malnutrition rehabilitation, overweight/obesity control, and micronutrient deficiency control.

Following Prof. Hop’s presentation, a panel discussion was carried out to sum up the strategies to combat the double burden of under- and over-nutrition in Thailand and in the region.
Future Directions in Saturated Fats

ILSI SEA Region’s Australasia country office organized a one-day meeting on Future Directions in Saturated Fats: Composition and Metabolism. Held on September 14, 2011, the objectives of this meeting were to provide the latest findings in saturated fats and insight into their composition and metabolism. There were 65 scientists and researchers from Australian universities and institutes who attended this conference.

Prof. Andrew Sinclair, the Director of the Metabolic Research Unit at Deakin University, opened the meeting with the introduction and welcome to audience. He provided an overview and summary of the Copenhagen meeting on Saturated Fats held on 2010. Prof. Sinclair discussed the findings of this meeting which have been published this year (The role of reducing intakes of saturated fat in the prevention of cardiovascular disease (Astrup et al., 2011)). The Copenhagen meeting concluded with an outline for future studies in issues related to fatty acids which Prof Sinclair presented.

Mr. Nick Goddard, the Executive Director of the Australian Oilseeds Federation, was the second speaker. His presentation, titled Facts or Fiction – Trying To Establish Fat Consumption Data In The Absence Of A National Dietary Survey, focused on fat consumption data and strategic industry direction. He emphasized that hard fats such as coconut oil, palm oil and butter have been replaced with value-enhanced soft oils like olive, sunflower, soya and specially canola oil. Between 1995 and 2011, consumption of hard fat in the Australian diet decreased from 48% to 40%, and consumption of canola showed an increasing trend from 15% to 30%. It was clear from his data from 1995 to 2011 that after oleic acid, saturated fats are the second highest group of fatty acids used by Australians and that linolenic is the lowest. He suggested that healthier diets would contain less saturated fats and the more linolenic acid.

Dr. Allan Green, Deputy Chief of CSIRO Plant Industry in Canberra, Australia, was the third speaker. His presentation was on ‘Genetic Manipulation Of Saturates And Unsaturates In Plant Oils – What’s In The Product Development Pipeline?’ Dr. Green discussed that plant oil production is dominated by four main crops (palm, soy, canola and sunflower); however, they are not naturally optimized for their nutritional value. To improve their nutritional profile, plant breeders have been redesigning fatty acid compositions. It can happen either through altering the related proportions of existing fatty acids by silencing genes that encode their biosynthetic enzymes, or through metabolic engineering to introduce new fatty acid biosynthetic enzymes and pathways. He showed differences between the fatty acid composition in different oils and development of high-oleic acid oils produced by these techniques.

Dr. Chakra Wijesundera is a Principal Research Scientist at the CSIRO Food and Nutritional division based in Melbourne. He presented data on healthier oils production, the stability and performance implications of good and bad fats. Despite unsaturated fatty acids being desirable for their health properties; they are less resistant to oxidative deterioration and therefore downgrade food quality in terms of rancidity of food and reduced shelf life. Dr Wijesundera showed the oxidizability formula to compare the functional properties among different fats. The oil industries try to produce a range of healthier fats by modification of the fatty acid composition, such as sustainable land-based sources of long chain omega 3 oils (canola, soybean) enriched with EPA and DHA.

Ms. Janis Baines from the Evaluation and Modelling Section at Food Standard Australia New Zealand (FSANZ) gave a comprehensive presentation on updating fatty acid values in the national food composition database for use in 2011/2013 Australian Health Survey (AHS). This large survey including 50,000 participants will report updated nationally representative data on health and nutritional status, current dietary habits, food and nutrient intakes, food composition, physical activity and sedentary behaviour. Ms. Baines focused on Food Composition Database (AUSNUT) which will provide nutrient profiles for all foods and supplements consumed in the AHSSurvey. For example, the lipid components for which intakes will be reported in the AHS include total fat, total saturated, monounsaturated and polyunsaturated fatty acids, total trans fatty acids, linoleic acid, alpha linolenic acid and cholesterol. AHS data is useful for Nutrition Panel Calculator (NPC), food standards development and monitoring, food incident responses and health policy and program development and evaluation.

There were three presentations at the afternoon session by Assoc Prof. Russell Keast of Deakin University, Assoc Prof. Andrew Holmes if the University of Sydney, and Prof. David Cameron-Smith of the University of Auckland.

Assoc Prof. Russell Keast talked about fat receptors on the tongue and their implications. He suggested that there is a sixth taste responsive to fats with the same pathway (7,9,10 cranial) as other tastes. He presented evidence supporting the concept of a fat taste and showed that sensitivity appears related to food consumption. In the studies presented, some subjects were very sensitive to C18 compared with C12 fatty acid; they could distinguish different concentrations of C18 fatty acid. In addition, he reported that fatty acid sensitivity was related with BMI – subjects with higher BMI were more sensitive. Taste thresholds for C18:1 fatty acid were significantly higher in obese subjects (8.8 ±1.6) compared with lean subjects (3.8 ± 0.8 mM) (P<0.05).

Assoc Prof. Andrew Holmes described how gut microbiota might influence fat storage and metabolism. He also emphasized how gut microbial
community structure can affect human health by explaining related factors such as host factors (genetic background, immunological state), gut microbiota (composition, activity) and interventions (diet, pharmaceuticals, exercise). For example, our microbial community influences our metabolism; therefore, different people have differing degrees of success at weight loss and restoration of metabolic health. He suggested that gut microbiota composition and stability could be a variable determining the success of intervention strategies for metabolic disease and obesity. He also mentioned that the change in gut microbiota over time is proportional to weight loss.

Prof. David Cameron-Smith gave a comprehensive talk on new ways of looking at fat absorption including the importance of postprandial lipid metabolism in human health, the mechanisms linking postprandial hypertriglyceridaemia to cardiovascular disease and the influence of dietary factors such as fatty acid composition on postprandial hypertriglyceridaemia. He reported a study of chylomicron triglyceride responses to different meals varying in fatty acid composition (dairy foods rich in saturated fats versus soy oil rich in unsaturated fats). Dairy foods generated a lower postprandial chylomicron response than the meal rich in polyunsaturated fat. Prof. Cameron-Smith also described how foods with smaller fat droplet sizes showed a decreasing trend of plasma TG level at 3 hours after feeding.

The meeting generated interesting questions which were answered during the three panel discussions at the end of each session.

Updates on the Science of Plant-based Extracts and Flavonoids

ILSI SEA Region’s Philippines Country Committee conducted a seminar on The Science of Plant-based Extracts and Flavonoids on July 19, 2011 at the Mandarin Hotel in Makati, Philippines. Over 70 participants, including representative from academia, industry and hospitals, as well as other health experts and medical practitioners attended this event.

HEALTH BENEFITS OF FLAVONOIDS

Dr. Robin van den Berg, a scientist from Unilever Netherlands, highlighted two issues – firstly, a shift in consensus in antioxidants, and secondly, emerging evidences on the benefits of flavonoids on cardiovascular health.

Dr. van de Berg emphasized that evidence in vivo of dietary antioxidants reducing free radical damage in humans have not been found. This means that dietary antioxidants may exert health benefits, but not via anti-oxidant-related mechanism. These findings were confirmed by the European Food Safety Authority (EFSA).

With respect to flavonoids, Dr. van den Berg explained that although flavonoids are credited for their ability to maintain blood fluidity, regulate vascular diameter, and facilitate flow-mediated vasodilation (FMV), it does not guarantee any protection against free radical damage; therefore they are not to be confused with antioxidants. Observational and intervention studies showed that a diet rich in flavonoids is associated with a reduced risk of cardiovascular disease. Tea has the highest flavonoids content compared with onions, apple, chocolate and wine.

PLANTBASEDACTIVES:MECHANISM, EFFICACY & SAFETY

Dr. Eugen Wohlgemuth, an Agriculture Engineer, Agronomist and Frutarom Health Switzerland’s expert on plant extracts, began his presentation on the mechanism, efficacy and safety of plant-based actives which refers to the plant raw material monographed in Ph.Eur. Although they are derived from plants, they are not restricted for use as pharmaceuticals or drug preparations but can also be used as ingredients for food formulations, nutraceuticals and cosmeceuticals with much more added value due to proven efficacy and safety data.

Dr. Wohlgemuth also presented the complexity of herbal actives, highlighting that unlike chemical mono-substances, herbal substances are complex mixtures with direct pharmacodynamic effects and influence on the pharmacokinetics of main and secondary constituents. Published RCTs and open clinical trials exhibiting quality, equivalence and efficacy aspects of some plant actives were also shown and presented. Examples included Echinacea Purpurea for immunity, Ilex Paraguariensis for fat inhibition and Curcubitae Pepo L. for bladder control/incontinence. He highlighted Pharmacopoeia monographs (Eur Ph, German E, ESCOP, etc) that serve as guidelines for quality assurance of products in Europe.

REACTIONS

The first reactor was Dr. Imelda Agdeppa from the Food and Nutrition Research Institute of the Philippines, who focused her discussion on the value of tea as a functional food purportedly of value in cardiovascular disease. Although many studies have been conducted linking tea to CVD, more multi-centre RCT studies in humans with consistent results are needed to draw any firm conclusion. Such studies must take into consideration different factors like study designs, more sample size, meal matrix across cultures, etc.

The second reactor was Dr. Emiliano Aligui from the Ateneo School of Medicine who suggested that for the development and use of Plant-based Extracts, the following should be considered: taxonomic and extract analysis, process validation, and Pharmacopoeia Monographs as basis for formulation, dosage and claims. He strongly suggested the conduct of local clinical trials and the formulation of guidelines for traditionally used herbal products.

The symposium ended with lively discussion, questions, comments and reactions during the open forum.
Building Community Health through Prevention Strategies and Partnerships

ILSI SEA Region’s support for this symposium included the invitation of key experts to present their latest findings and participate in the meeting. These included Dr. John Foreyt, Director of Behavioral Medicine Research Center, Baylor College of Medicine, USA, who was the keynote speaker and presented on “Global Experiences in Building Sustainable Healthy Communities: Overview from USA”, and Ms Debra Kibbe, then Director of the Physical and Nutrition Program, ILSI Research Foundation, USA, who chaired a concurrent session. Dr. Foreyt and Ms.Kibbe were also instrumental in organizing and facilitating a pre-symposium one-day Workshop on Clinicians Encouraging Self-Management in Healthcare and Well-being, that was targeted at healthcare professionals.

The symposium’s program covered a comprehensive range of topics, as well as speakers from diverse sectors such as public health, education, healthcare, food industry, and scientific and research organizations.

One of the first plenary sessions looked at Global, National and State Prevention Initiatives. Speakers in this session presented on health status updates and community health initiatives from different parts of the world. Besides Dr. Foreyt from the USA, presenters included Dr. Kate Armstrong, President and Founder of CLAN (Caring & Living as Neighbours), Assoc Prof. Steven Allender, Deputy Director of the WHO Collaborating Centre for Obesity Prevention at Deakin University, Ms. Louise Sylvan, CEO of Australian National Preventive Health Agency, as well as Ms. Joanne Smith, Director of Health Advancement, NSW Ministry of Health, from Australia; Dr. Yang Zhengxiong from the China Centers for Disease Control; and Assoc Prof. Bom Taecck Kim of the Department of Family Practice and Community Health at Ajou University of Medicine, South Korea. A key message, as noted by Dr. Foreyt, is that obesity is an environmental problem, and despite progress in genetic research, public health advances will only occur when the environment is modified and all the sectors of society are integrated into community change interventions.

The next plenary session explored this message further by focusing on how to build a health workforce committed to prevention. Prof. Glen Maberly, Director of CHIP, examined the core competencies of a health workforce that is committed to prevention, and concluded that such competencies are similar to the many skills that clinicians already have. The key is to adopt an orientation and mindset that focuses on prevention, and to optimize multi-sectorial partnerships.

Concurrent sessions on the first day of the symposium covered topics that included Partnerships for Health: Practical Lessons, where community-based programs to
promote healthy lifestyle and well-being were showcased; Urban Design and Sustainability for Health and Wellbeing, where presenters focused on how urban planning and design can have significant impact on health outcomes, and how the built environment can support healthy lifestyles; and The Role of Health Professionals in Prevention, which examined how medical practitioners and health workers can play key roles in primary and secondary prevention. Presenters shared an interesting array of programs, ranging from design of child-friendly environments, to the role of general practitioners in prevention, and exercise as medicine.

The final plenary session on the first day of the symposium looked at Perspectives on Healthy Communities. Speakers at this session shared how different community sectors – ranging from healthcare providers to business associations and academic institutions – are developing and implementing innovating programs to encourage healthy living.

The second day of the symposium opened with a plenary on Food and Health Initiatives. Ms. Kibbe presented on differing perspectives in America where health is viewed as an individual responsibility by some, while others view health problems such as obesity as partly resulting from environmental influences. This leads to the need to find balance between policy initiatives and individual responsibility for health-related behavior. Dr. Geoffrey Annison, Deputy CEO of the Australian Food and Grocery Council gave an overview of the food industry’s record of providing food products in response to changes in nutrition science. For instance, the food industry has provided consumers with healthier foods through better formulation, and by reducing risk-associated nutrients in main stream food products. Ms. Elizabeth Dunford, Research Officer from the George Institute for Global Health, highlighted a Global Branded Food Composition Database that aims to bring together data on nutrient information for processed foods that can be used to drive national and international improvements in the food supply. Ms. Alicia Martin, Founder and Director of Food Within Ltd, shared with the audience on how she established a transformative social enterprise that assists people with limited incomes to manage their finances, gain access to healthy foods and meet their family food needs.

The next plenary session – focusing on Healthy Children Initiatives, began with an update on School Nutrition and Physical Activity from the Americas by Dr. Foreyt. He highlighted the Family Lifestyle and Over Weight (FLOW) Prevention Study, where initial findings are promising suggesting school-based treatment of sufficient intensity can impact children’s physical and behavioral outcomes. Prof. Lynne Cobiac of the Preventative Health National Research Flagship at CSIRO the shared the Australian “Obesity Prevention and Lifestyle (OPAL) program by EPODE” which has been implemented in South Australia since 2009 based on seven principles, defined strategies and goals or themes. Each community has a 5-year implementation support plan. Another successful program highlighted was the Stephanie Alexander Kitchen Garden project, by its Founder and Director, Ms. Alexander who has devoted herself to developing school kitchen garden programs throughout Australia. Dr. Louise Hardy from the Prevention Research Collaboration at the University of Sydney presented on the implications of the Schools Physical Activity and Nutrition Survey (SPANS 2010). Findings from the showed the high frequency of consuming energy-dense and nutrient-poor foods, high consumption of sugar sweetened drinks, and poor food behaviors in the populations studied.

Concurrent sessions on the second day addressed topics such as Food and Health Initiatives; Perspectives on Healthy Communities; and Perspectives on Healthy Children. Several papers which reinforced the importance of multi-sectorial and innovative partnerships to achieve effective outcomes in prevention, were presented by representatives from the food industry, public health sector as well as community groups and organizations.

Following the concurrent sessions was a plenary on Healthy Children Initiatives. Prof. Claire Collins from the University of Newcastle spoke about intervention programs implemented in schools with high population of children with low socioeconomic status, as well as a program targeted at overweight fathers. These programs aim to be inclusive and accessible for parents and vulnerable families. Ms. Bridge Kelly from the University of Sydney shared that extensive research evidence has found that children are exposed to high levels of food marketing, most of which is for unhealthy food and drinks that are high in fat, sugar and/or salt. Research has also found that unhealthy food and beverage sponsorship of children’s sports events can influence children’s perceptions of these companies and their purchasing habits.

The symposium ended with closing remarks by the meeting organizers. Summing up the varied and useful information shared during the two-day meeting, it was highlighted that using a systematic approach to prevention would be a key strategy, and this may be achieved by:

1) analyzing the barriers to prevention and circumnavigating or demolishing those barriers;
2) supporting targeted actions and policies to reduce smoking, obesity, physical inactivity, and diabetes; and
3) creating collaborative, sustained partnerships that strategically work toward chronic disease risk reduction.
# ILSI SEA Region Calendar of Activities 2012 – 2013

## Meetings

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<td>Training Workshop on Safety Assessment of Food Ingredients</td>
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<tr>
<td>Symposium on Nutrition and Aging</td>
<td>1st Quarter, 2013</td>
<td>Singapore</td>
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## Research & Collaborative Projects

<table>
<thead>
<tr>
<th>Project</th>
<th>Status</th>
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<tr>
<td>ILSI Asian Branches Collaborative Project on Harmonization of Analytical Methods and Food Safety Standards in Asia In collaboration with ILSI Japan, ILSI Korea and ILSI Focal Point in China</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Scientific Review on Sodium Intake and Cardiovascular Health Outcome – The Role of Sodium Sensitivity and Homeostasis Regulation In collaboration with the Australia’s Commonwealth Scientific and Industrial Research Organization (CSIRO)</td>
<td>Ongoing</td>
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<tr>
<td>Scientific Review on Salt Intake in Southeast Asia Region Countries In collaboration with Saw Swee Hock School of Public Health, National University of Singapore, Singapore</td>
<td>Ongoing, to be completed in April, 2012</td>
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<tr>
<td>Upgrading of the ASEAN Food Safety Standards Database</td>
<td>2011 / 2012</td>
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<td>ILSI Global Water Project – Assessing the Safety of Water Used in the Production of Fresh and Minimally Processed Produce ILSI global project led by ILSI Europe, in collaboration with ILSI SEA Region and ILSI South Africa</td>
<td>2011 / 2012</td>
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<tr>
<td>Pilot of Project SWAN in Indonesia In collaboration with ILSI Japan CHP and SEAMEO Regional Center for Food and Nutrition</td>
<td>2011 / 2012</td>
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<tr>
<td>Survey on Classification and Regulatory Status of Functional Foods in Southeast Asia</td>
<td>2012 / 2013</td>
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## Publications

<table>
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<th>Title</th>
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<tr>
<td>Report on Regulatory Status of Micronutrient Fortification in Southeast Asia ILSI SEA Region Report Series</td>
<td>December 2011</td>
</tr>
<tr>
<td>Executive Summary and Report on Survey on Nutritional Status of Pregnant and Lactating Women, Infants and Young Children in ASEAN ILSI SEA Region Report Series</td>
<td>2012</td>
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ILSI SEA Region Report Series
Report on Regulatory Status of Micronutrient Fortification in Southeast Asia

Micronutrient malnutrition presents a public health problem in some industrialized nations, but even more so in the developing regions of the world. In Southeast Asia, micronutrient deficiencies have called for the implementation of several micronutrient fortification programs, such as on staple foods and condiments. National authorities have developed regulations that require mandatory fortification of certain nutrients and voluntary fortification of others. The scope and extent of fortification policies and programs, as well as national regulations governing fortification, vary significantly throughout the region.

To assist all stakeholders – including national bodies and regulators, industry, researchers and scientists across Southeast Asia to better understand the status of food fortification programs and regulations in the region, ILSI SEA Region conducted a year-long survey on the regulatory status of mandatory and voluntary fortification of micronutrients in the region. It is hoped that the survey findings will be useful to stakeholders in planning and implementing food fortification strategies within and between Southeast Asian countries.

This report on Regulatory Status of Micronutrient Fortification in Southeast Asia is the first publication under our new ILSI Southeast Asia Region Report Series.

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Announcement

6th Asian Conference on Food and Nutrition Safety

November 26 – 28, 2012, Raffles City Convention Centre, Singapore

ILSI SEA Region is organizing the 6th Asian Conference on Food and Nutrition Safety, a signature ILSI conference series that addresses the latest food safety and nutrition issues crucial to Southeast Asia.

This important event is being co-organized with the Agri-Food and Veterinary Authority of Singapore (AVA).

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PROGRAM HIGHLIGHTS
Featuring a slate of international and regional scientists and experts, the conference will focus on many hot topics, including:

- Global context of food safety
- Risk-benefit assessment of food
- Microbiological food safety
- Food packaging and food contact materials
- Emerging food technologies
- Risk perception and communication

WHO SHOULD ATTEND

- Government officials and policy-makers in the areas of food, nutrition, agriculture, and trade
- Food safety and regulatory affairs personnel, and R&D scientists from food industry
- Academic researchers, nutritionists, dietitians and public health officials

Contact us at ilsisea@singnet.com.sg for conference and registration details.

Early bird registration fees until September 15, 2012