PRINCE MAHIDOL AWARD CONFERENCE

Mainstreaming Health into Public Policies

28-30 January 2009
Bangkok, Thailand

PRINCE MAHIDOL AWARD CONFERENCE

Prince Mahidol Award

Prince Mahidol Award was established in 1992, to commemorate the 100th birthday anniversary of Prince Mahidol of Songkla who is recognized by the Thais as ***'The Father of Modern Medicine and Public Health of Thailand'***.

His Royal Highness Prince Mahidol of Songkla was born on January 1, 1892, a royal son of Their Majesties King Rama V and Queen Savang Vadhana of Siam. He received his education in England and Germany and earned a commission as a lieutenant in the Imperial German Navy in 1912. In that same year, His Majesty King Rama VI also commissioned him as a lieutenant in the Royal Thai Navy.

Prince Mahidol of Songkla had noted, while serving in the Royal Thai Navy, the serious need for improvement in the standards of medical practitioners and public health in Thailand. In undertaking such mission, he decided to study public health at M.I.T. and medicine at Harvard University, U.S.A. Prince Mahidol set in motion a whole range of activities in accordance with his conviction that human resources development at the national level was of utmost importance and his belief that improvement of public health constituted an essential factor in national development. During the first period of his residence at Harvard, Prince Mahidol negotiated and concluded, on behalf of the Royal Thai Government, an agreement with the Rockefeller Foundation on assistance for medical and nursing education in Thailand. One of his primary tasks was to lay a solid foundation for teaching basic sciences which Prince Mahidol pursued through all necessary measures. These included the provision of a considerable sum of his own money as scholarships for talented students to study abroad.

After he returned home with his well-earned M.D. and C.P.H. in 1928, Prince Mahidol taught preventive and social medicine to final year medical students at Siriraj Medical School. He also worked as a resident doctor at McCormick Hospital in Chiang Mai and performed operations alongside Dr. E.C. Cord, Director of the hospital. As ever, Prince Mahidol did much

more than was required in attending his patients, taking care of needy patients at all hours of the day and night, and even, according to records, donating his own blood for them.

Prince Mahidol's initiatives and efforts produced a most remarkable and lasting impact on the advancement of modern medicine and public health in Thailand such that he was subsequently honoured with the title of ***"Father of Modern Medicine and Public Health of Thailand"***.

In commemoration of the Centenary of the Birthday of His Royal Highness Prince Mahidol of Songkla on Janurary 1, 1992, the Prince Mahidol Award Foundation was established under the Royal Patronage of His Majesty the King Bhumibol Adulyadej to bestow international awards upon individuals or institutions which have made outstanding and exemplary contributions to the advancement of medical, and public health and human services in the world.

The Prince Mahidol Award will be conferred on an annual basis with prizes worth a total of approximately USD 100,000. A Committee, consisting of world–renowned scientists and public health experts, will recommend the selection of awardees whose nominations should be submitted to the Secretary–General of the Foundation before May 31st of each year. The committee will also decide on the number of prizes to be awarded annually, which shall not exceed two in any one year. The prizes will be given to outstanding performance and/or research in the field of medicine for the benefit of mankind and for outstanding contribution in the field of public health for the sake of the well-being of the people. These two categories were established in commemoration of His Royal Highness Prince Mahidol's graduation with Doctor of Medicine (Cum Laude) and Certificate of Public Health and in respect to his speech that:

"True success is not in the learning, but in its application to the benefit of mankind".

The Prince Mahidol Award ceremony will be held in Bangkok in January each year and presided over by His Majesty the King of Thailand.

Message from
Chairs of the International Organizing Committee

Since the Ottawa Charter for Health Promotion in 1986, and other subsequent Conferences on health promotion, healthy public policy has been acknowledged of its importance and has been subsequently reaffirmed in various global high level conferences. While healthy public policy focuses on public sectors outside the health sector mandating "health of the population" an essential factor when formulating their policies, the movement towards healthy public policy has still been mainly confined in the health sector. Slow progress has been observed on the concrete achievement of healthy public policy. However, more concrete examples were observed in the linkage between health and economic consideration when taking policy decision. Recently, in the European Union, Health in All Policies was endorsed and several countries demonstrated their commitments, whereby developing countries have yet to learn from them.

The International Prince Mahidol Award Conference 2009, thus, focuses attention on advocating the global movement and brings awareness from various sectors to put "health lens" in their policy formulation under the theme "Mainstreaming Health into Public Policies". A number of experiences and lessons drawn from country case studies and cross cutting issues were discussed and deliberated at this Conference. This paves the road towards ensuring "health in all policies" by country governments, civil societies and international development partners.

We are convinced that the processes, mechanisms, participation, and also the outcome of the Conference will contribute to stronger and more concrete movement in 'mainstreaming health into public policies'.

As Chairs of the Organizing Committee, we are grateful to all contributions by many organizations to make the Conference a success. Main contributors are the Rockefeller Foundation, the World Bank, the Prince Mahidol Award Foundation, and the Royal Thai Government who co-host this conference. Each parallel session was sponsored by organizations that provide support in terms of technical assistance and or funding support to the participants. We are most thankful to the following organizations: the Task Force on Child Survival and Development, the Rockefeller Foundation, the World Bank, the World Health Organization, the Food and Agriculture Organization, and the People's Health Movement. We also acknowledge the active participation and deliberations by all conference participants.

In addition, we would like to express our appreciation to the Secretariat Team who has worked so hard in preparing for the Conference.

Finally, we would like to extend a warm welcome to conference participants and wish for an interesting, constructive and successful exchange of ideas and experiences.

Prof. Dr.Vicharn Panich
Chair
Organizing Committee,
International Award
Committee, PMAF
Bangkok, Thailand

Dr.Ariel Pablos-Mendez
Co-Chair
Organizing Committee,
Managing Director,
The Rockefeller
Foundation, USA

Dr.Toomas Palu
Co-Chair
Organizing Committee,
Lead Health Specialist,
World Bank, Cambodia

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SIDE MEETINGS

Tuesday, 27 January 2009		
09.00 - 10.30	**Launch of the Global Health Watch2 (GHW2)** by the People's Health Movement	**Bangkok Panorama, 3rd Fl.**
10.30 - 16.30	**Global Action for Health System Strengthening** by the G8 Hokkaido Tokyo Summit Follow-up	**Queen's Park 3, 2nd Fl.**
Friday, 30 January 2009		
18.00 - 21.00	**Meeting on the Road Traffic Injury Center of Excellence (RTICE)** by the Center for Global Health Collaboration	
Saturday, 31 January 2009		
09.00 - 12.00	**The Global Health Consortium** by the Graduate Institute, Geneva	

CONFERENCE PROGRAM IN BRIEF

Wednesday, 28 January 2009		
07.00 - 17.00	**Optional Field Trip**	
Thursday, 29 January 2009		
09.00 - 09.10	**Opening Ceremony by HRH Princess Maha Chakri Sirindhorn**	**Queen's Park 1-2, 2nd Fl.**
09.10 - 10.10	**Keynote Speeches**	
	Special Presentation on the Social Determinants of Health	
10.10 - 10.30	**Break**	**Foyer of Queen's Park 1-2**
10.30 - 13.00	**Panel Session** *Enhancing Healthy Public Policies: What Experiences Can Be Learned from Countries?*	**Queen's Park 1-2, 2nd Fl.**
13.00 - 14.00	**Lunch**	**Parkview Restaurant, Ground Floor**
14.00 - 17.00 (Break during 15.30 - 16.00)	**Parallel Session 1** *Road Safety*	**Queen's Park 3, 2nd Fl**
	Parallel Session 2 *Agricultural Policies and Climate Change: Challenge and Opportunity for Future Diets and Public Health*	**Queen's Park 4-5, 2nd Fl.**
	Parallel Session 3 *Global Strategy for Health Diplomacy: A Way Forward for Foreign Policy and Global Health*	**Queen's Park 2, 2nd Fl.**
17.45 - 18.30	**Cocktail Reception**	**Foyer of Queen's Park 1**
18.30 - 20.30	**Welcome Dinner hosted by Royal Thai Government**	**Queen's Park 1-2, 2nd Fl.**

CONFERENCE PROGRAM IN BRIEF

Friday, 30 January 2009		
09.00 - 12.00 (Break during 10.30 - 11.00)	**Parallel Session 3 (cont. from Day 1)** *Global Strategy for Health Diplomacy: A Way Forward for Foreign Policy and Global Health*	**Queen's Park 1, 2nd Fl.**
	Parallel Session 4 *Urban Development*	**Queen's Park 2, 2nd Fl.**
	Parallel Session 5 *The Private Health Sector: Appropriate Policies to Ensure its Contribution to Achieve Health Systems Goals of Efficiency, Equity, Quality and Affordability*	**Queen's Park 3, 2nd Fl.**
12.00 - 14.00	**Lunch**	**Parkview Restaurant, Ground Floor**
14.00 - 16.30	**Conference Synthesis Session** *Summary, Conclusion and Policy Recommendations* **Closing Remarks**	**Queen's Park 1, 2nd Fl.**
Saturday, 31 January 2009		
09.00 -12.00	**9th Organizing Committee Meeting**	**Saithip Room, 3rd Fl.**

List of Speakers, Panelists, Chairs, Moderators and Rapporteurs

Session	Speakers
KEYNOTE & SPECIAL PRESENTATION	
	Ban Ki-moon Judith Rodin Michiaki Takahashi Timothy Evans
PANEL	
	Carlos Dora Armin Fidler Amphon Jindawattana Van Hubbard Lori Leonard Kimmo Leppo Karen Lock
ROAD SAFETY	
	Kavi Bhalla Saul Billingsley Tony Bliss Hiroshi Ishizuki Roger Johansson Julio Urzua
AGRICULTURAL POLICIES AND CLIMATE CHANGE	
	Simon J. Funge-Smith Cristina Grandi Mary L'Abbe Josef Schmidhuber Ricardo Uauy
GLOBAL STRATEGY FOR HEALTH DIPLOMACY	
	Laragh Gollogly Bjorn Skogmo Devi Sridhar

Panelist	Chair/Moderator	Rapporteur
	Lincoln Chen Julian Schweitzer	Nusaraporn Kessomboon Toomas Palu Myat Htoo Razak Yot Teerawattananon
Chin Hoong Chor Ahmad Farhan Mohd Sadullah	Armin Fiddler Mark Rosenberg	Rohit Baluja Lisa Hayes Paibul Suriyawongpaisal Thaksaphon Thamarangsi
	Myint Htwe Kraisid Tontisirin	Ellen Muehlhoff Biplab Nandi Sirinya Phulkerd
Pirawat Asawapranee Gustavo Gonzalez-Canali Percy Mahlathi Inga Nyhamar Bounpheng Philavong Gaudenz Silerschmidt Keizo Takemi	Nick Drager Bates Gill Ilona Kickbusch Sigrun Mogedal	Pirawat Atsavapranee Sopida Chavanichkul Benedikte Dal Bates Gill Laragh Gollogly Suriwan Thaiprayoon

List of Speakers, Panelists, Chairs, Moderators and Rapporteurs

Session	Speakers
URBAN DEVELOPMENT	
	Sharon Friel Mohamed Khalil David Legge
THE PRIVATE HEALTH SECTOR	
	Gerald Bloom Dai Hozumi Richard Smith Viroj Tangcharoensathien
CONFERENCE SYNTHESIS AND CLOSING	
	Lincoln Chen

Panelist	Chair/Moderator	Rapporteur
Francoise Barten Timothy Evans Toomas Palu Laetitia Rispel David Sanders Buranaj Smutharaks	Fran Baum	Kate Bond Prem John Prangtip Kanchanahattakij Hani Serag Chanwit Tribuddharat
Sara Bennett David de Ferranti Eyitayo Lambo Sangita Reddy	Ariel Pablos-Mendez	Supon Limwatananon Stefan Nachuk Walaiporn Patcharanarumol Phusit Prakongsai
		Katherine Bond Jeff Johns Toomas Palu Viroj Tangcharoensathien

Prince Mahidol Award Conference 2009
Mainstreaming Health into Public Policies
28-30 January 2009
Imperial Queen's Park Hotel, Bangkok, Thailand

Program

1. Rationale

Health has become a very high priority global development agenda in the last decade judging from the tremendous increase in health related ODA, global and national political attention, global health partners, and active public involvement. These investments, however, focus mainly on tackling the three major infectious diseases, i.e. HIV/AIDS, Tuberculosis, and Malaria, and less on the health systems capacity building and other MDGs such as maternal and child mortality, nutrition, and environmental health.

The Constitution establishing the World Health Organization defines health as *"A state of complete physical, mental and social well-being, and not merely the absence of diseases and infirmity"*. The Executive Board of WHO in 1996 added 'spiritual' well-being to the definition, although not yet globally accepted. It has been accepted with ample evidences that health is a multi-sectoral and multidimensional social issue. All public policies thus have both positive and negative implications on well-being, or health. Improving health thus necessitates the involvement and the advocacy for 'health' lens in all public sector policies.

Healthy public policy is thus an explicit concern for health promotion and development. The main intention of healthy public policy is to create a supportive environment to enable people to lead healthy lives, as stated in the 1986 Ottawa Charter for Health Promotion that:

> *"Health promotion goes beyond health care. It puts health on the agenda of policy makers in all sectors and at all levels, directing them to be aware of the health consequences of their decisions and to accept their responsibilities for health....*

> *"Joint action contributes to ensuring safer and healthier goods and services,healthier public services, and cleaner, more enjoyable environments."*

In pursuit of healthy public policies, all parties concerned including international development partners, lending agencies, donors, national and sub-national governments, private corporate sectors involved in foreign policies, agriculture and food, trade, education, industry, energy, finance and investment, science and technology, transport and communications, and finally security, need to take into account health as an essential concern when formulating their policy.

There were global firm commitments towards healthy public policies, notably in the 1986 Ottawa Charter and confirmed now and again in subsequent international conferences on Health Promotion [Adelaide, Australia (1988), Sundsvall, Sweden (1991), Jakarta, Indonesia (1997), Mexico City, Mexico (2000) and Bangkok, Thailand (2005)]. Nevertheless, slow progresses in the concrete achievement of healthy public policy were observed. Concrete examples are not often described. The movement on healthy public policy was still confined in the health sector, whereas significant concerns among non-health sector policies providing an enabling environment to health of the population have rarely been envisaged.

It is therefore an opportune time to revisit and advocate the global movement and awareness on mobilizing commitments from leaders in all sectors to apply, as a rule of good practice a 'health' lens in formulating their policies. It would be highly beneficial that the global political leaders commit to **'mainstreaming health into all public policies at all levels'.**

The Prince Mahidol Award Conference is an annual international conference hosted by the Royal Thai Government, the Prince Mahidol Award Foundation, and relevant International Organizations, Foundations and Civil Society Organizations. The Conference serves as an international forum for sharing evidences for health related policies and strengthens social commitments for health development. This conference is closely linked to the annual Prince Mahidol Award for public health and medicine, one of the most prestigious international health awards. It has taken the lead to organize the 2009 conference together with Intergovernmental Organizations including the UN, foundations, bilateral development partners, and global civil society organizations.

2. Objectives

1. Review the evidence and examine concrete examples of the health impacts that stem from public policies in non-health sectors:

1.1. To review evidence on the positive and negative impacts of various public policies, especially in non-health sectors, on the health of the population. The topics of discussion will be both ***issue-based*** as well as ***sector-based*** by selecting the issues/sectors that have health implications.

i. To identify and share the experiences on various mechanisms and issues related to EIA, HIA, institutional capacity to enforce, monitor and lessons learned

ii. To identify what structures and mechanisms work best to encourage the formulation and implementation of healthy public policy

iii. To examine critically case studies related to healthy public policy
iv. To review various practices and experiences of donors and lenders in non-health sectors which impact health of the population
v. To identify how to improve the international rule-making process

2. To discuss and agree on tangible policy recommendations on establishing, strengthening, and sustaining mechanisms in mainstreaming health into all public policies at all levels.

3. Side Meetings

Tuesday, 27 January 2009
09.00 - 10.30
Launch of the Global Health Watch 2 (GHW2) by the People's Health Movement (PHM)
10.30 - 16.30
Global Action for Health System Strengthening by the G8 Hokkaido Tokyo Summit Follow-up
Friday, 30 January 2009
18.00 - 21.00
Meeting on the Road Traffic Center of Excellence (RTICE) by the Center for Global Health Collaboration and the Rockefeller Foundation
Saturday, 31 January 2009
09.00 - 12.00
The Global Health Consortium by the Graduate Institute, Geneva

4. Program of the Prince Mahidol Award Conference 2009

Wednesday, 28 January 2009
07.00 - 17.00
An Optional 1-day Field Trip
15.00 - 18.00
Prince Mahidol Award Ceremony (Invitees only)
18.30 - 21.00
Prince Mahidol Award Dinner (Invitees only)
Thursday, 29 January 2009
09.00 - 09.10
Opening Ceremony by HRH Princess Maha Chakri Sirindhorn
09.10 - 10.10
Keynote Speeches (45 min) • **Message from UNSG** delivered by **Dr. Noeleen Heyzer,** Under-Secretary-General of the United Nations and Executive Secretary of UNESCAP (15 min) • **Judith Rodin,** President, the Rockefeller Foundation (15 min) • **Michiaki Takahashi,** Prince Mahidol Laureate 2008 (15 min) **Special Presentation on the Social Determinants of Health (15 min)** • **Timothy Evans,** Assistant Director-General, Information, Evidence and Research, WHO
10.10 -10.30
Break / Press Conference
10.30 - 13.00
Panel Session *Enhancing Healthy Public Policies:* *What Experiences Can Be Learned from Countries?* **Objectives** 1. To assess how public policy that affect health of the population, and how these health impacts were monitored and measured;

2. To describe what mechanisms, how they are evolved and developed, by whom in influencing public policies to be conducive to health of the population

3. To assess how effective and sustainable these mechanisms in order to draw lessons and its replicability in other settings.

Part 1: Video (12 minutes)

After the key note speech, 12 minutes of VDO presentation, highlighting the impact of various policies on health of population, such as transport and road traffic injuries, urban design, planning and development results in physical inactivity of the population and exposure to injuries, consumption of unhealthy diets of high fat, high calories results in obesity epidemic in developing and developed countries, and how countries addresses these problems by ensuring all policies applied health lens.

Part 2: Overview (25 minutes)

1. The chair of the Panel Session, **Julian Schweitzer** [Director of Health, Nutrition and Population, Human Development, the World Bank], introduces the speakers, moderates Q&A and summarizes key issues on each component

2. The moderator **Lincoln Chen** [President, China Medical Board of New York], introduces the structure of the session, consists of overview session, country experiences session and structure and mechanisms ensuring Health is in all Policies and wrap up at the end

3. **Carlos Dora** [Medical Epidemiologist, WHO, Geneva, Switzerland] briefly introduces the subject matter, historical evolution of healthy public policies, EIA, HIA, achievement, issues and challenges for **10 minutes**.

4. **Karen Lock** [Professor, London School of Hygiene and Tropical Medicine, United Kingdom], touches upon the European Union on "Public Health, Food and Agriculture Policies" which have major bearing on obesity and also experiences on country policies, evidence on the effectiveness of these policies and interventions. She will spend **10 minutes** plus **5 minutes** Q&A.

Part 3: Country experiences (30 minutes)

Each speaker is invited to present not more than **10 minutes** plus **5 minutes** for Q&A,

1. **Van Hubbard,** Director, NIH Division of Nutrition Research Coordination and Associate Director for Nutritional Sciences, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

The goal of healthy weight in Americans: Observations from Healthy People 2010 and other National initiative

2. **Lori Leonard,** Associate Professor, Johns Hopkins School of Public Health
The health impact of large oil pipe-line in Chad and Cameroon: an assessment of health impact from a longitudinal survey

Part 4: Structure, mechanisms in ensuring Health is in all Policies (45 minutes)

Each speaker is invited to present not more than **10 minutes** plus **5 minutes** for Q&A,

1. **Amphon Jindawattana** [Secretary General, National Health Commission, Thailand] describes the historical evolution of the National Health Act which requires mandatory Health Impact Assessment in all major public policies; and the process/mechanism to ensure that these requirements are met.

2. **Armin Fidler** [Lead Health Policy Advisor, the World Bank] on comprehensive public policies addressing the increasing and larger contribution of chronic non-communicable disease on burden of diseases in developed and developing countries.

3. **Kimmo Leppo** [Adjunct Professor, University of Helsinki and former Director-General of Health Department, Finnish Ministry of Social Affairs and Health] addressing the European and Finnish country experiences in putting health in all public policies in particular both success and failure cases, and their determinants. Special focus will be provided on the country experiences on mechanisms, institutions and involvement of civil society, academia and government in ensuring health in all policies.

5. Discussion and wrap up 50 minutes

- **Lincoln Chen** [President, China Medical Board of New York] moderates this part, poses questions to the speakers and solicit questions from and discussions by the participants for around **40 minutes**
- Final conclusion "towards a healthier future" around **10 minutes.**

13.00 - 14.00

Lunch

14.00 - 17.00
(Break during 15.30 - 16.00)

Parallel Session 1
Road Safety

Objectives

- To assess the global burden of disease attributable to road injuries and present comparative analysis of the relative risk and costs attributable to road injuries
- To understand the potential of the health sector to contribute to reversing the epidemic of road traffic injuries
- To review evidence on the impact of public policies addressing RTI risk factors on road traffic injuries such as road infrastructure, mobility planning, and urban and environmental planning
- To discuss how public policies in all sectors and close inter-sectroral coordination and action can improve road safety and achieve tangible and measurable results, both in low and middle income countries
- To showcase international evidence and best practices on how to reduce road injuries through inter-sectoral coordination and action as well as innovative policy choices

Part 1: Measuring the magnitude of the road traffic injury epidemic and comparing it with other challenges (20 minutes)

The health sector has made a critical contribution in helping to frame the global road safety crisis as a true epidemic, and using health indicators (DALYs, and morbidity and mortality statistics) to describe and bring attention to the problem. These health metrics are more equitable and more useful at times than the traditional economic measures of the road safety problem.

Speakers:

- **Kavi Bhalla,** Research Scientist, Harvard University Initiative for Global Health *Global Burden of Disease: update on road safety components*

Part 2: Assessing and improving the capacity of countries for road safety, and understanding the new paradigm in road safety (50 minutes)

The World Bank Global Road Safety Facility is pioneering a new and exciting approach to improving road safety that focuses on assessing and then strengthening the capacity of countries to implement road safety measures using a safe systems approach. The health sector is the source of another important notion that complements the idea of the capacity review and capacity building: this is the notion of using a systems approach to frame the ultimate goal as "disease eradication"-as in the successful eradication of Smallpox. This is the goal of Swedenís Vision Zero, an approach which says that it is possible to eradicate road traffic deaths, and that it is sometimes appropriate to set the target for road safety deaths at zero.

Speakers:

- **Tony Bliss,** Lead Road Safety Specialist, The World Bank Global Road Safety Facility

  New paradigm in road safety; second-generation road safety projects, capacity assessment and strengthening
- **Hiroshi Ishizuki,** Executive Director, International Association of Traffic and Safety Sciences (IATSS)

  *Traffic Safety Measures in Japan: An Historical Investigation and Lessons Learned from "Partnership" and Promotion/Enlightenmen*t

Panelists:

- **Ahmad Farhan Mohd Sadullah,** Director General, Malaysian Institute of Road Safety Research
- **Chin Hoong Chor,** Director (Degree Program), National University of Singapore

Part 3: The health sector is an important partner in the multi-sectoral approach to global road safety (50 minutes)

The health sector has helped to frame the issue as a multi-sectoral issue, with important contributions to be made (in fact needed to be made) by transportation, police, health, finance, urban planning, education, and environmental protection.

This multi-sectoral approach has been reflected in the composition of the Commission for Global Road Safety, and various stakeholder forums, and in the Regional Actor (Regional Committee) convened for Latin America and the Caribbean. The health sector has played a role in convening multi-sectoral coalitions that effectively brought the issue to the attention of the UN (the World Bank, FIA Foundation, WHO, GRSP, UNICEF, and non-profits all played an important role), and helped to convene the regional actor for road safety for Latin America and the Caribbean. The multi-sectoral systems approach will also play a key role in the Global Ministerial Conference that will take place in Moscow, in November 2009.

Speakers and panelists:

- **Mark Rosenberg,** Executive Director, The Task Force for Child Survival and Development and Director, The Global Road Safety Forum (Moderator)
- **Roger Johansson,** Chief Strategist, The Road Safety Division, Swedish Road Administration
  Multi-sectoral collaboration in road safety and the new role of the health sector
- **Julio Urzua,** Executive Secretary, The Transitional Commission for Road Safety in Latin America & the Caribbean
  Multi-sectoral regional committee in Latin America and the Caribbean
- **Saul Billingsley,** Deputy Director General, FIA Foundation for the Automobile and Society
  November 2009 Global Ministerial Conference on Road Safety

Part 4: Discussion and summary (30 minutes)

- **Armin Fiddler,** Lead Health Policy Adviser, The World Bank and Adjunct Faculty, The George Washington University, School of Public Health (Moderator)
- Themes: What concrete steps do we take to mobilize the health sector's full participation in stopping this epidemic?
  - Measuring the magnitude of the epidemic
  - Participating in measuring and building national capacity for road safety
  - A leadership role for new role of the health sector
  - Linking with the Global Ministerial Conference in Moscow, November 2009

Panelists: Kavi Bhalla, Tony Bliss, Saul Billingsley, Roger Johansson, Mark Rosenberg, Julio Urzua

Parallel Session 2

Agricultural Policies and Climate Change: Challenge and Opportunity for Future Diets and Public Health

Objectives

- Review evidence of the extent to which current food and agriculture policies shape food production, food security and dietary adequacy

- Review the impact of climate change and the growing use of food crops as biofuel on world food security and food prices
- Present case studies from around the world that feature innovative policies and programmes in the agriculture and food sector (incl. fisheries and foresty) with links to sustainable natural resource use, resulting in good nutrition
- Identify opportunities for linking dietary and public health recommendations with sustainable agricultural production to ensure a healthy and safe food supply
- Discuss how public policies in the food and agriculture sectors can result in a safe, healthy food supply for consumers

Co-Chairs:

- **Kraisid Tontisirin,** Emeritus Professor of Pediatrics, Faculty of Medicine Ramathibodi Hospital and a Senior Advisor of the Institute of Nutrition (INMU), Mahidol University
- **Myint Htwe,** Director, Programme Management, WHO Regional Office for South-East Asia

Part 1: Theoretical/Global issues presentations

- **Josef Schmidhuber,** Head, Global Perspectives Studies Unit, FAO
  Global trends in food and nutrition issues: climate change, biofuel and soaring food prices
- **Ricardo Uauy,** President, the International Union of Nutrition Sciences
  Policy options to improve diet and public health: Addressing the double burden of malnutrition

Part 2: Issue-based/Sector-based Case Studies

- **Cristina Grandi,** Board Member, AIAB (Italian Organic Farming Organization) and Liaison Officer, IFOAM (International Federation of Organic Agriculture Movements)
  Sustainable, Organic School Meals in Italy
- **Simon J. Funge-Smith,** Senior Fishery Officer and Secretary,the Asia-Pacific Fishery Commission (APFIC), FAO Regional Office for Asia and the Pacific
  Case Studies in Fisheries Self-Governance
- **Mary L'Abbe,** Director, Bureau of Nutritional Sciences, Health Canada
  Taking transfats out of the food supply/processed foods

Part 3: Discussion

Parallel Session 3

Global Strategy for Health Diplomacy: A Way Forward for Foreign Policy and Global Health

Objectives

- Give an overview of how diplomacy is changing and the opportunities and challenges this presents for global health, and to give a critical overview of the foreign policy and health nexus.

- Review current initiatives and experiences in foreign policy and health - focusing both on what issues were/are being addressed and how these issues were/are being tackled from a country and regional and perspective.
- Review high level international health-related processes and identify ways (focusing on both policy and process issues) in which a foreign policy and global health lens can accelerate consensus-building on issues that at present are characterized by divergent national interests.
- Development of a roadmap for Foreign Policy and Global Health.

Co-Chairs

- **Sigrun Mogedal,** Ambassador, Ministry of Foreign Affairs, Norway
- **Nick Drager,** Director, Department of Ethics, Equity, Trade and Human Right, WHO

Part 1: Foreign Policy and Global Health Nexus

Objective: To give an overview of how diplomacy is changing and the opportunities and challenges this presents for global health; to give a critical overview of the foreign policy and health nexus.

Speaker:

- Bjorn Skogmo, Ambassador, Ministry of Foreign Affairs, Norway

Part 2: Foreign Policy and Global Health-Country and Regional Perspectives

Objective: To review and share current initiatives and experiences in foreign policy and health - focusing both on what issues were/are being addressed and how these issues were/are being tackled.

Speakers:

- **Devi Sridhar,** University of Oxford, will summarize and present the country and regional papers
- Comments from 2 experts on FPGH (Keizo Takemi and Bounpheng Philavong)

Short background papers from 7-9 countries and regional organizations:

- France (Gustavo Gonzalez-Canali)
- Indonesia
- Norway (Inga Marie Weidemann Nyhamar)
- Senegal
- South Africa (Percy Mahlati)
- Switzerland (Gaudenz Silberschmidt)
- Thailand (Pirawat Atsavapranee)
- United Kingdom
- ASEAN
- SARC

Part 3: Foreign Policy and Global Health-High-Level Health Negotiations and Foreign Policy

Objective: To review high level international health-related processes and identify ways (focusing on both policy and process issues) in which a foreign policy and global health lens can accelerate consensus-building on issues that at present are characterized by divergent national interests

Speakers:

- **Laragh Gollogly,** Managing Editor, The Bulletin of the World Health Organization, Geneva, Switzerland will prepare and present synthesis report of the studies
- Comments from experts on FPGH (Gaudenz Silberschmidt)

18.30 - 20.30

Welcome Dinner hosted by Royal Thai Government

- H.E. Mr. Witthaya Keawparadai, Minister of Public Health, Thailand

Friday, 30 January 2009

09.00 -12.00
(Break during 10.30 - 11.00)

Parallel Session 3 (continue from Day 1.)
Global Strategy for Health Diplomacy: A Way Forward for Foreign Policy and Global Health

Part 4: A Roadmap for Foreign Policy and Global Health

Participants (in break-up groups) will develop (based on a template provided) a roadmap for FPGH

Moderators:

- **Bates Gill,** Director, Stockholm International Peace Research Institute
- **Ilona Kickbusch,** Director, Global Health Programme, Graduate Institute of International and Development Studies

Parallel Session 4
Urban Development

Objectives

- To review the available evidence on underlying causes of urbanization, poverty reproduction and health in informal settlements and to determine which types of actions and policies will be most effective to tackling them

- To propose effective strategies and actions that will improve health through action on the wide range of health determinants within the urban settings
- To play a pivotal role in following up the adoption and implementation of recommendations of the report of knowledge network on Urban Settings and the knowledge network on social exclusion

Chair: Fran Baum, Professor of Public Health and The Inaugural Director of the Southgate Institute of Health, Society and Equity, Flinders University, Adelaide, Australia; and Co-Chair, The Global Steering Council, Peopleís Health Movement

Part I. Case Studies (50 minutes)
1. Presenting a common synthesis from the case studies (20 minutes)
- **David Legge,** Associate Professor, School of Public Health, La Trobe University, Australia; and Member of the Steering Council, the People's Health Movement

2. Panel discussion (30 minutes)
Questions and comments from the participants + responses and discussions from the panelists
(Panelists are the authors of the 3 case studies + the presenter of the Synthesis)
- **David Legge,** Associate Professor, School of Public Health, La Trobe University, Australia; and Member of the Steering Council, the People's Health Movement
- **Laetitia Rispel,** Adjunct Professor and Senior Researcher, Center for Health Policy, School of Public Health, University of the Witwatersrand, South Africa
- **Francoise Barten,** Coordinator of Nijmegen Urban Health Group; and Co-Chair ICSU Urbanisation and Health Planning Group, Radboud University Nijmegen, the Netherlands
- **Buranaj Smutharaks,** Deputy Chairman of the Democrat Party of Thailand's Healthcare Committee and former advisor to Bangkok Governor

Part II. Key Issues (40 minutes)
1. Privatization of basic services (20 minutes)
- **Mohamed Khalil,** Consultant of Cardiology, Egyptian Health Insurance Organization

2. Recommendations of the Knowledge Network on Urban Settings - The Commission on Social Determinants of Health (20 minutes)
- **Sharon Friel,** Director of the Global Health Equity Group, The International Institute for Society and Health, University College London, United Kingdom

Part III: The Way Forward (60 minutes)
1. Interactive discussion among the panelists and participants (50 minutes)
Panelists
- **David Sanders,** Professor and Director, School of Public Health, University of Western Cape, South Africa; and Member of the Steering Council, The People's Health Movement

- **Timothy Evans,** Assistant Director-General for Information, Evidence and Research, WHO
- **Toomas Palu,** Lead Health Specialist, The World Bank, Cambodia
- **Buranaj Smutharaks,** Deputy Chairman of the Democrat Party of Thailand's Healthcare Committee and former advisor to Bangkok Governor

2. Summary from the Chair and close (10 minutes)

Parallel Session 5

The Private Health Sector: Appropriate Policies to Ensure its Contribution to Achieve Health Systems Goals of Efficiency, Equity, Quality and Affordability

Objectives

- To assess the attitudes and perceptions of government and private health sector stakeholders towards the role and capacity of government and private sectors in service provision and financing to achieve health system goals
- To understand the current state of and potential future trends regarding the role of the private sector in health provisioning
- To assess the stewardship and regulatory capacity of governments in low- and middle-income countries, and identify skills and abilities needed to better engage private health stakeholders
- Based on the above experiences, to recommend effective strategies and practical tools to better leverage the public and private sectors to achieve health system goals of equity, quality, access, and affordability-both at present and regarding future design of health systems

Part 1: Introduction

Moderator introduces key empirical findings on role and trends of private sector provision (work by Supon of IHPP which drawn from analyses of DHS). Broad introduction on evidence regarding private spending as well as scope, landscape and trends regarding private sector health provision.

Part 2: Presentations by four speakers (15 minutes each)

- **Dai Hozumi,** Senior Technical Advisor for Health Systems and Policy, PATH

  Attitudes and perceptions of the private sector. A global survey and three in-depth sets of country interviews regarding perceptions, and the underlying reasons for them, towards the private sector on the part of various public and private stakeholders
- **Richard Smith,** Professor of Health System Economics and Head of the Health Policy Unit, London School of Hygiene and Tropical Medicine, United Kingdom

  Trade and health - the role and impact of the private sector
- **Gerald Bloom,** Fellow of Knowledge, Technology and Society Team, Institute of Development Studies, University of Sussex, United Kingdom

  Innovative models in the private sector and future trends
- **Viroj Tangcharoensathien,** Director, International Health Policy Program (IHPP)

Regulatory capacity - a global survey of the institutional capacity of the government in regulating private health sectors in low- and middle- income countries

Part 3: Moderated panel discussion "the Way Forward"

Moderator:
- **Ariel Pablos Mendez,** Managing Director, Rockefeller Foundation

Panelists:
Public Sector
- **Eyitayo Lambo,** Chief Executive Officer, International Management & Health Consultants and Former Minister of Health, Nigeria

Private Sector
- **Sangita Reddy,** Executive Director (Operations), Apollo Hospitals Group, India

International Organizations
- **Sara Bennett,** Advisor, Alliance for Health Policy and Systems Research
- **David de Ferranti,** President and Chief Executive Officer, Results for Development Institute

12.00 - 14.00

Lunch

14.00 - 16.30

Conference Synthesis Session
Summary, Conclusion and Policy Recommendations
- **Member of Conference Rapporteur Team**

Closing Remarks
- **Lincoln Chen,** President, China Medical Board of New York

Saturday, 31 January 2009

09.00 - 12.00

9th Organizing Committee Meeting

"Harnessing scientific discovery and development to improve health of the poor"

Michiaki Takahashi M.D.
Emeritus Professor, Osaka University

Various prophylactic vaccines and treatment methods have been developed for many infectious diseases, markedly reducing the morbidity and mortality for those infectious diseases in developed countries.

However, on a global scale, infectious diseases are still raging. The annual report of the World Health Organization shows that the number of deaths from infectious diseases per year reached 14,700,000, accounting for about 1/4 of all deaths. In particular, in developing countries where medical environments and equipments are still poor, vaccines are the life-lines for children.

Poverty - not only from economical point of view, it relates the quality of human lives. Various organizations try to tackle how to improve this issue. To approach this problem from health fields, promoting wellness, especially preventive medicine would be one of the solutions to get out from the poverty situations.

From this point of view, I would like to talk about scientific discovery and development to improve health of the people, including poor. Especially I would like to focus on the development of the vaccines for poliomyelitis and measles, both are contributing much to improve health of children in the world.

In 1949, Enders, Weller and Robbins at Harvard School of Public Health demonstrated that poliovirus could be grown in non- nerves human embryonic tissue, work was later honored with the Nobel Prize. Tow different approaches for vaccine development pursued at the time were successful: inactivation of poliovirus by formalin pioneered by Jonas Salk, licensed as inactivated polio vaccine (IPT) in 1955 after one of the largest controlled field trials.

Attenuation of the three serotypes of poliovirus were performed by Albert Sabin, licensed in 1961 as monovalent oral poliovirus vaccine (OPV) and in 1963 as trivalent OPV later. Poliomyelitis has affected humankind since ancient times. Development and widespread use of poliovirus vaccine have effectively controlled poliomyelitis in

industrialized countries. The global poliomyelitis eradication initiative, adopted in 1988 by WHO, has led to dramatic decreases in the incidence of poliomyelitis in developing countries. Although some issues remain, global eradication have been proposed and judged feasible.

In 1954, Enders and Peebles successfully isolated measles virus in human and monkey kidney tissue cultures. Adaptation of the virus to chick embryo and cultivation in chick embryo tissue culture led to vaccine development and licensed in 1963. Their vaccine was later improved, further attenuated by Schwarz and by others. Widespread vaccination effects on the incidence of measles and its associated complication in the world.

Around 1980, Our Foundation (The Research Foundation for Microbial Disease of Osaka University) has helped Fiocruz (National vaccine producing facilities), Brazil, through JICA (Japan International Cooperation Agency) to construct facilities to produce a large dose of measles vaccine (CAM 70 strain), which was completed and has been operated well. The produced measles vaccine has not only met national demand but they are supplying neighboring countries. Our Foundation is helping also Bio Farma (National vaccine producing facilities), Indonesia, for measles vaccine production, through JICA.

Now these science and technological cooperation bear fruits, and they can produce this measles vaccine at low cost and save children.

In 1996, the WHO, PAHO, and CDC convened a meeting to review progress in global measles control and the elimination effort in the western hemisphere. The consultative group concluded that eradication was feasible using currently available vaccines and that a strategy based on periodic mass campaigns and strengthening of immunization services will be needed in most developing countries. As of 2006, four of six WHO regions have adopted goals for measles elimination (Americas by 2000, Europe and the Eastern Mediterranean by 2010, and the Western Pacific by 2012). The African and South East Asian regions have measles mortality reduction goals as they are in the final stages of polio eradication.

It is necessary for us to cooperate with each other, not to produce our own benefit, but to help people around the world to live together.

Michiaki Takahashi
Emeritus Professor
Board Member,
Research Foundation for Microbial Diseases
Osaka University

Professor. Michiaki Takahashi was graduated from Osaka University Medical School in 1954. He completed Graduate Course of Medical Sciences in 1959, majoring in poxvirus virology. Then he was appointed Research Assistant, Department of Virology, Research Institute for Microbial Diseases, Osaka University. He studied development of attenuated measles, polio vaccines. He was promoted to Associate Professor in 1963. He studies adenovirus in Baylor Medical College (Houston) as a research fellow (1963-1964) one year supported by Rockefeller Foundation and then studied genetics of bacteriophage in Fels Research Institute, Temple University (1964-1965). While staying in Houston, his son (3 years old) took severe chickenpox, when he had an idea of developing varicella vaccine in the near future.

In 1965, he returned to Research Institute for Microbial Diseases, Osaka University and studied conditional lethal mutants with regard to malignant transformation of cultured cells with adenovirus and herpes simplex virus. From these experiences, he was convinced that varicella-zoster virus is even though a member of herpes virus group, may never be linked to human cancer. In 1971, he isolated a strain of Oka (taken from surname of patient with typical chickenpox) of VZV, and started to develop varicella vaccine. He succeeded in development of varicella vaccine (Oka strain) in 1974. He was honored with Kojima Saburo Memorial Award (1975), Asahi Award (1985) and then “Scientific Achievement Award” from VZV Research Foundation (N.Y.) in 1997.

He was promoted to Professor of the same Department in 1979 and then jointly appointed to Director of the Institute (1984-86).

He retired from Osaka University in 1991. He is now Emeritus Professor of Osaka University, Board member, Research Foundation for Microbial Diseases of Osaka University.

Judith Rodin
President
The Rockefeller Foundation

Judith Rodin is president of the Rockefeller Foundation. She was previously president of the University of Pennsylvania, the first woman to lead an Ivy League institution, and provost of Yale University.

During her first three years at the Rockefeller Foundation, Dr. Rodin recalibrated the Foundation's focus for the 21st century, launching major initiatives to bolster resilience to climate change in poor communities around the world, mobilize an agricultural revolution in Africa, rebuild New Orleans in the wake of Katrina, strengthen the economic security of working families, and shape smarter, more sustainable transportation policies in the United States. She is the first woman to serve as the Foundation's president in its 96 year history.

At the University of Pennsylvania, Dr. Rodin presided over an unprecedented decade of growth and progress that transformed the institution, its campus, and community. Under her leadership, Penn doubled its research funding and tripled both its annual fundraising and the size of its endowment. It engineered a comprehensive, award-winning, and internationally acclaimed neighborhood revitalization program in West Philadelphia. And the university attracted record numbers of undergraduate applicants, welcomed its most selective classes in history, while climbing from 16th in the leading national rankings to fourth.

Dr. Rodin was a member of Yale University's faculty for 22 years before she became provost. She was trained as a research psychologist and pioneered the behavioral medicine movement. Dr. Rodin graduated from Penn, earned her Ph.D. from Columbia University, and has since received 15 honorary doctorate degrees. She is the author of more than 200 academic articles and chapters, and has written or co-written 12 books, including her most recent, *The University & Urban Renewal: Out of the Ivory Tower and Into the Streets* (University of Pennsylvania Press, 2007).

Dr. Rodin served on President Clinton's Committee of Advisors on Science and Technology, is a member of several leading academic societies, and sits on a number of leading non-profit and corporate boards.

Timothy Evans
Assistant Director-General
Information Evidence and Research
World Health Organization

Dr. Tim Evans, of Canada, is the Assistant Director-General for Information, Evidence and Research. Previously, Dr. Evans was the Assistant Director-General for Evidence and Information for Policy. He has a Bachelor of Social Sciences from the University of Ottawa and a D.Phil in Agricultural Economics from the University of Oxford, as well as a Doctor of Medicine from McMaster University in Canada.

Dr. Evans trained in internal medicine at the Brigham and Women's Hospital at Harvard University. He was an assistant professor of international health economics at the Harvard School of Public Health. From 1997-2003, Dr. Evans was Director of Health Equity at the Rockefeller Foundation.

Panel Session

Enhancing Healthy Public Policies: What Experiences Can Be Learned from Countries?

Avoiding and preparing: public policy and chronic noncommunicable diseases

Olusoji Adeyi, MD, DrPH, MBA
Coordinator, Public Health Programs,
The World Bank. Washington, D.C.

Within a few decades, chronic noncommunicable diseases (NCDs) will dominate health care needs in most low- and middle-income countries. This is a result of the epidemiological transition and aging. Increasingly, policy makers and program managers are being challenged to formulate effective strategies for preventing NCDs, to address cost pressures arising from new technologies, and to mitigate the effects of disabilities on those affected by NCDs. But how can policy makers control health costs even as new technologies become available? How might program managers deliver services as efficiently and equitably as possible? What are some broad guidelines for determining the roles of public policy in relation to preventing and controlling NCDs? What are the implications of the NCD burden for public policy?

Projections are not predictions, but a plausible scenario is the doubling of historical rates of NCD mortality reduction worldwide during 2005-15. Because of offsetting aging trends, the total number of NCD deaths would still increase, but by about 3 million instead of about 6 million. This would be important progress, but it also shows that even extraordinary success with NCD interventions would slow down, but not reverse, the overall upward trend in NCD morbidity and mortality because of population aging. Policy makers need to be prepared for this scenario: it is necessary, but not sufficient, to implement preventive measures against NCDs.

An equally important consideration is morbidity. NCDs account for about 46 percent of the disease burden measured in disability-adjusted life years (DALYs) in low- and middle income countries, and large increases in NCD-related DALYs are projected for the future.

There are two key messages for policy makers. One is the need for public policies to prevent NCDs to the greatest extent possible, and in doing so to promote healthy aging and avoid premature deaths. The other is a concurrent need to recognize

that the burden of NCDs will increase because of population aging, and therefore public policy has a role to play in dealing with the pressures that this will impose on health services. These messages are complementary. They present a challenge to action, a look at reality in terms of expectations under plausible scenarios, the financial and systemic constraints on effective responses to NCDs, and opportunities for effective policy choices.

The Goal of Healthy Weight in Americans: Observations from Healthy People 2010 and other National Initiatives

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Overweight and obesity constitute an important public health problem. Overweight and obesity are associated with many of the leading causes of death, including coronary heart disease, stroke, type 2 diabetes, and some forms of cancer, as well as a range of other negative heath outcomes, such as gallbladder disease, respiratory dysfunction, gout, and osteoarthritis (1-3).

The classifications of overweight and obesity have varied over time, and sometimes from study to study. Body mass index (BMI; in kg/m^2) is widely recognized as a weight-for-height index that has a high correlation with adiposity, but it does not quantify total body adiposity or convey information concerning regional fat distribution. However, BMI is an easily obtained measure that has been recommended for use in all age groups. In fact, most clinical studies assessing the health effects of overweight and obesity rely on BMI. With some caveats, BMI can be utilized for comparisons across studies both in the United States and internationally. One important caveat is the fact that health risks associated with overweight and obesity are part of a continuum and the relative risk for a specific co-morbidity at a given BMI may vary when different populations are observed. As an example, in the United States, the health-related risks associated with obesity are commonly observed in Japanese Americans

and populations from Southeast Asia at lower BMI's than in Whites, whereas, Black Americans have been shown to have fewer weight-responsive health-related risk factors than do Whites at a given BMI. One hypothesis for the difference in health-related risk factors among various ethnic populations is based on data related to body fat distribution, including a differential in relative amounts of visceral adiposity or intra-abdominal fat among the various ethnic/racial groups. The fact that BMI does not provide information concerning fat distribution re-emphasizes the concept that the BMI cutoff points should serve as guidelines and further assessment and characterization should be performed as needed. Additionally, we need to recognize that we still do not have the direct causal relationship between increasing adiposity and the observed increase health risk. Currently, there is great interest in the identification of various inflammatory markers in the cascade of development of the co-morbidities associated with overweight and obesity.

Ideally, health-oriented rather than solely weight-based definitions of overweight and obesity should be used such that individuals would be assessed with regard to the presence of weight-responsive co-morbidities (4). Such health-oriented definitions are perhaps more useful as assessments of individuals are undertaken. Unfortunately, no such definition currently exists. However, correlations of the change of the BMI distribution with a change in health-related risk factors, co-morbidities, and health care costs can provide useful data for the development of health care policy and community planning. From a public health perspective, the use of BMI cutoff points to identify overweight and obesity has been useful in helping describe implications for populations since population data have demonstrated an increase health risk with an inappropriate increase in relative weight. Stemming the tide of the increasing prevalence of overweight (BMI ≥ 25) and obesity (BMI ≥ 30) in adults and overweight in youth identified as a BMI equal or greater than the 95th percentile derived from the revised 2000 CDC growth curves, and encouraging people to move toward a healthier weight are major public health goals. As we strive to stem the current trend, we need to identify individuals who are showing inappropriate weight gain, independent of where their BMI may currently place them and encourage them to adopt healthier lifestyle behaviors.

A multitude of factors are likely to contribute to the development of overweight and obesity, from inherent biological traits that differ between individuals relevant to body weight; to environmental and socioeconomic factors; to behavioral factors—which may have both molecular and environmental influences. Thus, the coordinated and eventually integrated efforts of many federal agencies and public and private organizations will be valuable in working towards addressing the public health efforts to prevent and decrease overweight and obesity. Currently, many groups recognize the benefits to placing primary efforts on prevention with the recognition that if successful, these actions will also help prevent existing weight related problems from getting worse as well as slow the development of weight-related chronic disease in the future.

In June 2002, President Bush launched *HealthierUS*, an initiative to improve people's lives, prevent and reduce the costs of disease, and promote community health and wellness (5). All Federal Departments were requested to undertake efforts to support individuals to be physically active on a daily basis, eat a more nutritious diet, obtain preventive screenings, and make healthier choices while avoiding risk behaviors. Within the U.S. Department of Health and Human Services (DHHS), *Steps to a*

HealthierUS was developed as an effort to fund communities to implement chronic disease prevention and health promotion programs that target three major chronic diseases-diabetes, obesity, and asthma and their underlying risk factors of physical inactivity, poor nutrition, and tobacco use (6). The Secretary of DHHS initiated a *500-Day Plan* and *Priority Activities* of which the area of Prevention recognized that the risk for development of many chronic diseases could be reduced if society would adopt a better culture of wellness (7). *Healthy People 2010* is composed of a set of national health objectives and provides a vision for improving the health of all Americans (8). *Healthy People 2010* builds on efforts of other initiatives that have been ongoing over the last several decades and is consistent with and helps support *HealthierUS* and *Steps to a HealthierUS*.

Despite improvements in the overall health of the Nation over the last several decades, there continues to be significant disparities in the burden of illness associated with chronic disease, especially those with differential prevalence in certain population groups. Overcoming and eliminating such health disparities is one of two overarching goals of *Healthy People 2010.* Specific objectives are identified within the DHHS *Healthy People 2010* to heighten awareness by the public and the health care provider of factors associated with the development of overweight and obesity, the relative health consequences of increased body weight, and appropriate considerations for prevention or intervention (9). The health consequences of increased body weight are part of a continuum, but eventually result in the onset of chronic disease. Numerous studies have noted the disparities in prevalence of overweight and obesity among populations of different ethnic origin. Similarly, there are marked differences in the health risk at a given BMI, especially within certain ethnic groups. We must seek consistency in the delivery of public health messages. The challenge is to develop appropriate health messages and interactions with the our academic and public health colleagues, industry, the public and the media to convey the concepts relating to weight, weight management, and health risks associated with various degrees being overweight or obese.

As part of the process through which DHHS, representatives of other Federal Agencies, and other experts across the U.S. assess the status of achieving the goals and objectives of *Healthy People 2010,* an assessment of data trends and other supporting programs and efforts are scheduled. These assessments have been performed in a number of ways, including a *Healthy People 2010 Midcourse Review* (10) and periodic Progress Reviews of each of the Focus Areas within *Healthy People 2010.* The two sections of *Healthy People 2010* that are most closely aligned with addressing the increasing prevalence of overweight and obesity include the Nutrition and Overweight Focus Area and the Physical Activity and Fitness Focus Area. The most recent Progress Review for the Nutrition and Overweight Focus Area occurred on April 3, 2008 (11) and the Progress Review for the Physical Activity and Fitness Focus Area occurred on June 26, 2008 (12). In addition, data trends, consideration of new science, assessment of other emerging public health priorities, and a reflection of factors that may present challenges or barriers to achieving success must be re-evaluated and highlighted in a public forum or the literature.

The most recent estimates of the prevalence of overweight and obesity within the U.S. are derived from our National Health and Nutrition Examination Survey (NHANES) (13). These estimates indicate that have moved away from the targeted goals for overweight and obesity identified in *Healthy People 2010* for all populations, although

some recent reports interpret the data as indication that the prevalence may be leveling off in some groups (14, 15). *Healthy People 2010* has set a target of 15% for prevalence of obesity in adults as assessed by a BMI of 30 or greater. In 2005-2006, the NHANES data provided an estimate of 34.3% of U.S. adults 20 years or older having a measured BMI of 30 or greater. However, the data showed no statistically different estimates from the prevalence observed in 2003-2004 (14). Adults aged 40-59 years were reported to be more likely to be obese compared to younger or older individuals. Overall, by viewing the distribution of BMI among adults, there is a shift to the right that indicates the adult population is getting heavier, and the shift is most pronounced in proportion of the curve that represents the heaviest population (14). Non-Hispanic black women (53%) and Mexican-American women (51%) were found to have a higher prevalence of a BMI of 30 or greater than non-Hispanic white women (39%) of the same age (14). The most recent data did not show racial or ethnic disparities among men. In a similar manner, there were no significant differences observed between the prevalence of sex-specific BMI for age at or above the 95th percentile for youth aged 2-19 years when data from 2005-2006 were compared to data from 2003-2004 (15). A prevalence of 16.3% was observed for youth within this age range for the combined data from 2003-2006. Although non-Hispanic black and Mexican-American youth tended to have higher sex-specific BMI for age percentiles than non-Hispanic white youth, there was actually no established trend for an increase in prevalence of overweight and obesity within these respective populations (15).

Some of the challenges and/or barriers to successful promotion of healthy weights have been discussed. We must better recognize that obesity is a result of the interplay of multiple factors, including inherited, metabolic, behavioral, environmental, cultural, socio-economic, and the interaction among each of these components. Not all factors contribute with the same magnitude for all individuals. Thus, we need to better characterize what factors are most important for which individuals or populations. To solve the obesity epidemic, we need to emphasize the role of partnering in the implementation of individual, community, and national strategies. All sectors of the community need to be involved. As various organization develop initiatives and programs, a critical assessment as to the added value that such activities will provide needs to be carefully evaluated so that resources can be used most efficiently. There needs to be coordination of efforts across government, public and private organizations. Efforts to address one or more of the etiological factors leading to the development of overweight and obesity may be over-powered by other factors not being addressed (i.e. school-based interventions may be dwarfed by factors to which youth are exposed after school or at home).

At the community level, there needs to be a supportive environment for healthy lifestyle choices. It is difficult for an individual to feel that they must frequently behave differently from others who surround them. Schools and worksites should help with providing healthier options and lifestyles to help establish new social norms that contribute to the wellness of their students and employees, and subsequently have some influence on the behavior at home and among family members. At the family and individual level, recommendations need to consider the cultural, socio-economic, and other environmental factors which impact behavioral choices. In addition, the impact of time and time constraints, whether real or perceived, must be recognized. We must constructively make use of the marketplace, the media, and other forms of communication to convey appropriate and consistent messages.

As we look to the future, it is increasingly recognized that as we strive to progress towards a healthier Nation, we must change our social norms such that they are more supportive of making healthier choices and achieving a healthier lifestyle, especially as it pertains to nutrition and activity. In doing so, governments at the national, state and community, public and private organizations, and families and individuals need to develop and adopt actions with the concept of sustainability considered. Additionally, from a health care perspective, we need to shift from a disease care system to a health care system, recognizing that 75% of our Nation's health care dollars are spent on chronic preventable diseases.

Since the release of *The Surgeon General's Call to Action to Prevent and Decrease Overweight and Obesity* (16) in 2001, a series of meetings have been held in each of the ten U.S. Public Health Service Regions (17) to achieve the following objectives:

- Engage all sectors of the community
- Promote awareness of ongoing and planned activities
- Promote networking among community organizations
- Promote sharing of resources
- Support "grassroots" efforts
- Develop new and sustained actions
- Modify community and individual priorities relating to diet and activity

The emphasis to achieve sustainability of action was considered a primary priority. A National Forum (17) was held in 2006 following each of the Regional meetings. This forum recognized the benefit of the use of community-based participatory process. This process tailors interventions to the needs and characteristics of the local community and includes representatives of the community in the planning and implementation, as well as the interpretation of the results. It is often somewhat more time consuming to utilize this approach since it takes time to build trust, learn to work within the cultural differences and to jointly determine the best manner to carry out the tasks. However, the goodwill that is developed offers the opportunity for greater sustainability.

Through its research mission, the National Institutes of Health, an agency within DHHS, seeks to identify genetic, behavioral, and environmental causes of obesity; to understand how obesity leads to type 2 diabetes, cardiovascular disease, and other serious health problems; and to build on basic and clinical research findings to develop and study innovative prevention and treatment strategies. Given the importance of the obesity epidemic as a public health problem, and its relevance to the mission of most of the NIH Institutes, Centers, and Offices (ICs), the NIH Director Dr. Elias Zerhouni established the NIH Obesity Research Task Force in April 2003, as a new effort to accelerate progress in obesity research across the NIH. The Task Force is co-chaired by the Director of the National Institute of Diabetes and Digestive and Kidney Diseases and the Director of the National Heart, Lung, and Blood Institute. A key element of the NIH Director's charge to the Task Force was the development of a *Strategic Plan for NIH Obesity Research* (18).

The purpose of the *Strategic Plan for NIH Obesity Research* is to provide a guide for coordinating obesity research activities across the NIH and for enhancing the development of new research efforts based on identification of areas of greatest scientific opportunity and challenge. The Strategic Plan represents a cohesive, multi-

dimensional research agenda for addressing the problem of obesity. It includes short-, intermediate-, and long-term goals for basic, clinical, and population-based obesity research, along with strategies for achieving those goals that likewise range in timeframe. Building on scientific advances from previous NIH-supported efforts, the Strategic Plan seeks to maximize collaboration among the NIH Institutes, Centers, and Offices (ICs) and to capitalize on their expertise and interest in developing obesity research initiatives. The Strategic Plan's goals, and strategies for achieving them, are organized into chapters framed upon the following four themes:

- Research toward preventing and treating obesity through lifestyle modification.
- Research toward preventing and treating obesity through pharmacologic, surgical, or other medical approaches.
- Research toward breaking the link between obesity and its associated health conditions.
- Cross-cutting research topics, including health disparities, technology, fostering of interdisciplinary research teams, investigator training, translational research and education/outreach efforts.

As with any future-oriented plan, the *Strategic Plan for NIH Obesity Research* is intended to be dynamic. As new scientific opportunities arise from current research investments and accomplishments, the research planning process will evolve to build on these areas, thus accelerating research in the most promising directions to continue to meet the challenges of obesity. Currently, a critical assessment of the *Strategic Plan for NIH Obesity Research* is taking place with a revised document anticipated by early 2010. Additional information concerning updates on the *Strategic Plan for NIH Obesity Research,* links to specific research initiatives, and links to workshops related to obesity can be accessed at the following web site: http://www.obesityresearch.nih.gov/ .

Currently, the DHHS is developing a framework for *Healthy People 2020* (19). With the recognition that to achieve improved health for our population one must engage more than just the health agencies and the health community, a Federal Interagency Workgroup and the Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020 have been formed to provide guidance. It is anticipated that the framework for *Healthy People 2020* will identify risk factors and determinants of health to be important concepts to inform and guide the development of objectives to improve health. The framework is to be published early in 2009, while the process to launch the health objectives along with baseline data, derived targets and implementation strategies will culminate in early 2010. As in the past, there has been an opportunity for public comment into the process as well as the ability for the public to listen during the meetings of the full Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020.

As we go forward, our ultimate goal is to prevent disease and disability. Research and research translation into appropriate policies and practices are the key to our success.

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Health impact assessment as a social tool for healthy public policy: Thailand's experience

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Preamble

Three decades ago, in 1978, the World Health Organization (WHO) issued the Alma Ata Declaration, which emphasized development of the idea of primary health care in order to achieve the objective of "Health for All". Since then, Thailand, as a member of WHO, has worked resolutely to achieve this objective and has made good progress, resulting in success. In 1986, Thailand shifted its health development strategy to emphasize health promotion in accordance with the Ottawa Charter, which emphasized five working strategies: building healthy public policies, creating environments supportive of health, strengthening community activities, developing individual skills of relevant personnel, and reorienting the system of health services.

An important shift in Thailand's paradigm on health began when the new Constitution of the Kingdom of Thailand was adopted in 1997. The Constitution placed importance on the idea of participatory democracy, and also reaffirmed many rights of the people, one of which is the right to good health. Three years later in 2000, the Senate Committee on Public Health publicized a "the National Health System Report" which asserted that the state of the Thai people's health remains far from ideal, as can be seen in the fact that Thai people still suffer from preventable illnesses and diseases caused by accidents, crime, violence, pollution, contamination from dangerous substances, HIV/ADIS, drugs, and many types of dysfunctional behavior. The incidence of non-communicable diseases, mental and chronic illnesses has also increased. At the same time, healthcare services have been focused on solving problems after they occur, and this mode of action requires high levels of expenditure but gives low returns on health. Moreover, such a mode results in low standards, lack of efficiency and quality, and lack of justice in terms of health service. Thus, there arose a need to reform the

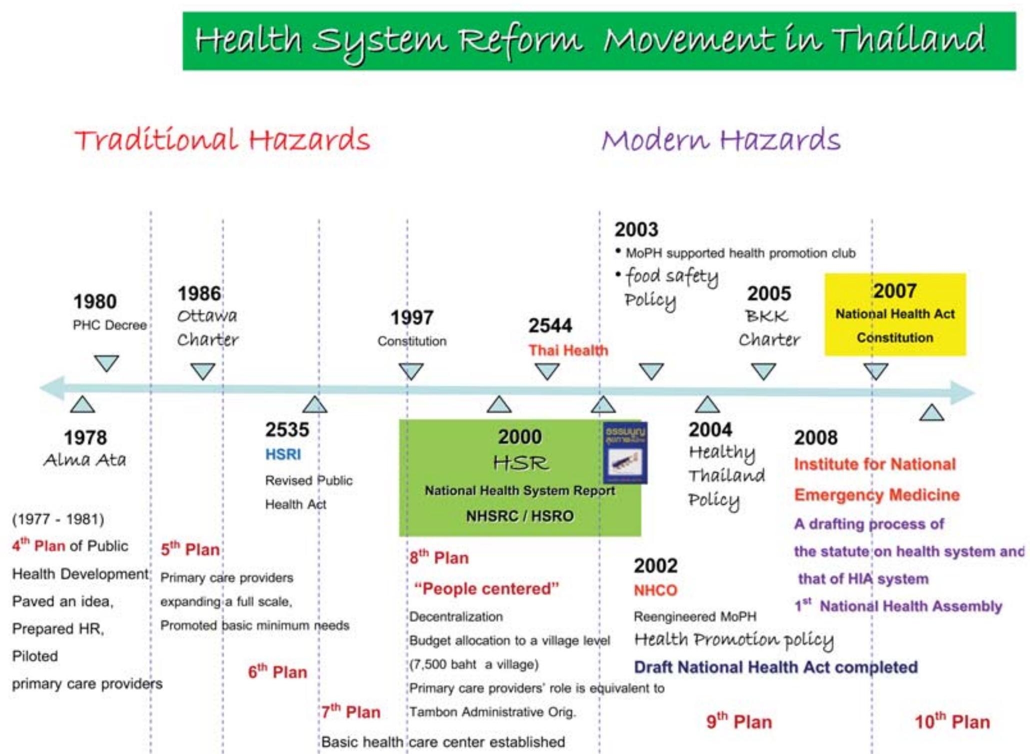
totality of the health system to follow the idea of “build health first before repair”. And this need was deemed to require a drafting of a national health act to be the tool of reform.

The National Health System Report referred to above led to the appointment of a National Health System Reform Commission (NHSRC), chaired by the Prime Minister, and with the Health System Reform Office (HSRO) as secretariat. The HSRO’s mission was to draft a National Health Bill in line with recommendations made by the Senate Commission on Public Health. At the same time, other new health organizations were established to support the implementation work of the new health system, for example, the Thai Health Promotion Foundation in 2001, the National Health Security Office in 2002, etc.

Finally, the National Health Act was enacted and officially announced on 19 March 2007. The definition of health was defined broadly, to include not just physical but also mental, social and spiritual health. Moreover, the Act places importance on the participatory process in the development of a healthy public policy, the ultimate goal being a state of well-being for the people.

During the drafting of the National Health Act, it was proposed that health impact assessment be an integral part of a desirable health system for the people, that is, opportunities must be given for the people to participate in the development of public policies. It was felt that a system of health impact assessment is an important tool or mechanism to protect the people’s health from activities, projects, and public policies initiated or implemented by the public or private sectors. In addition, it was thought a system to manage and mitigate the impact of public policies on health and to look after people who have been affected should be established. This, then, was the origin of the development of a system of health impact assessment (HIA) in Thailand.

Figure 1 Health system reform movement in Thailand



The evolution of HIA in Thailand

Health impact assessment in Thailand was previously regarded as an element of environmental impact assessment (EIA), which was used to assist in the consideration of development projects for approval. It was only when health reform was initiated in 2000 that health impact assessment was developed as a process of social learning aimed at crafting a healthy public policy.

New organizations were established to work with the new concept. The National Health System (NHSRC) assigned the Health Research Systems Institute (HRSI) to seek appropriate guidelines to develop a healthy public policy and health impact assessment. In 2001, a long term research program entitled "Program for HIA research and development" was established. Two years later, the name was changed to "Program for research and development on healthy public policy and health impact assessment system (HPP-HIA program)". Its task was to research on impacts on health resulting from, policies, programs and project issues on the health and particularly non-health sectors.

After the reform of the civil service in 2002, the Public Health Ministry also set up the Sanitation and Health Impact Assessment Division under the Department of Health. This division's mandate was to develop a HIA system in order to support the implementation of public health laws. It was also to do a research on and development of a health surveillance and health impact assessment system at the local community level.

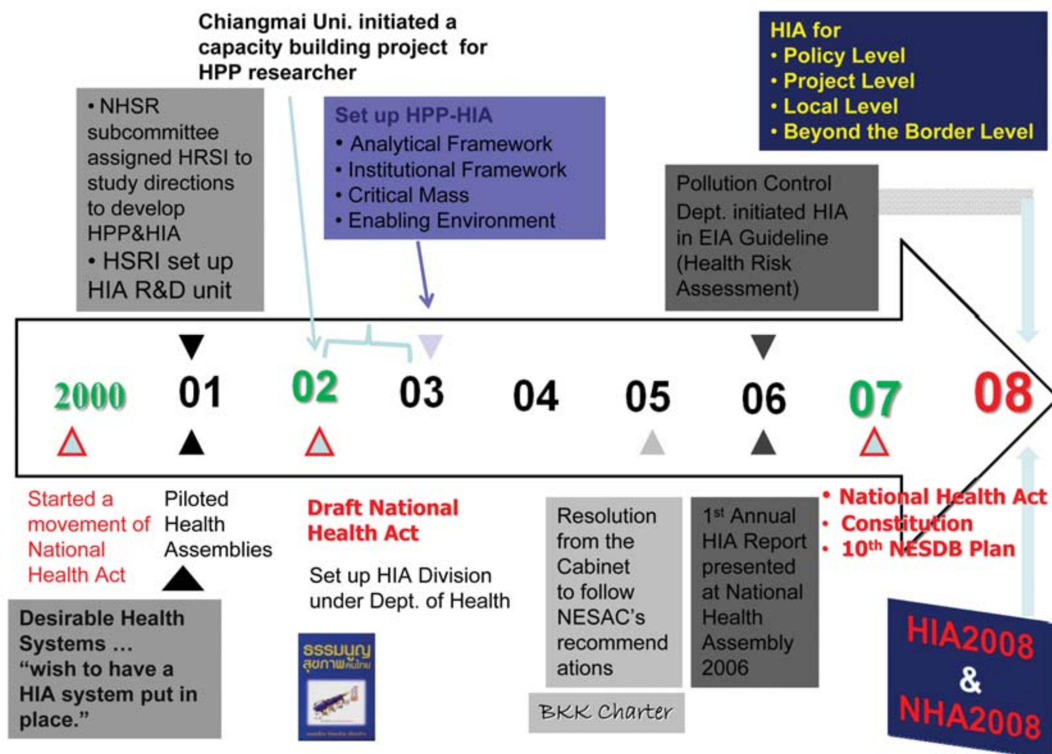
Other sectors have applied HIA in a broad range of cases and at many levels, from small scale projects in communities to large scale projects such as contract farming, mining and industry. Such widespread use of HIA resulted in a National Economic and Social Advisory Council (NESAC) proposal to the Government urging it to continually develop the HIA system. In 2005, the cabinet issued a resolution acknowledging the proposal and assigned the Public Health Ministry to report progress on HIA development to the cabinet and NESAC.

The 10th National Economic and Social Development Plan (2007 - 2011) in its development strategy on biodiversity and security of natural resources and environment specified that there is to be development of management capacity to efficiently decrease pollution and control activities that have an impact on the quality of life. It was determined that there should be a system, mechanism, and indicators for health impact assessment in place. Furthermore, environmental impact analysis reports done should include assessment of social and health impacts. At the same time, it should also be noted that the National Health Act, enacted in March 2007, is the first law in Thailand to contain specific statements on health impact assessment.

The 2007 Constitution of the Kingdom of Thailand stipulates in Section 67 that any project or activity which may seriously affect a community in the area of natural resources, environment and health is prohibited, unless impacts on environment and health are assessed and a public hearing is undertaken to obtain the opinion of stakeholders as well as that of independent environmental and health organizations.

At present, HIA has been applied at all levels from activities, projects and programs up to public policies, including assessments done on those which have cross-border impacts.

Figure 2 The evolution of HIA in Thailand



Health impact assessments in the National Health Act

The 2007 National Health Act is among the few laws in Thailand, which contains the most extensive public participation provisions recorded in Thai history. The Act covers rights, responsibilities, and functions on health and health security. Moreover, the Act includes the operational mechanisms and a clearly defined public participatory process. In particular, a section on HIA explicitly states that the people have a right to demand for and participate in a HIA process. It is the first Act for Thailand that includes several sections on HIA.

Section 10 In the case where there exists an incident affecting public health, a State agency having information relating to such incident shall expeditiously disclose such information and the protection thereof to the public.

Section 11 An individual or group of people has the right to request for estimation or participating in the estimation of impact on health resulting from a public policy.

An individual or group of people shall have access to information, explanation and underlying reason prior to a permission or performance of a program or activity which may affect his or her health or the health of a community, and shall have the right to express his or her opinion on such matter.

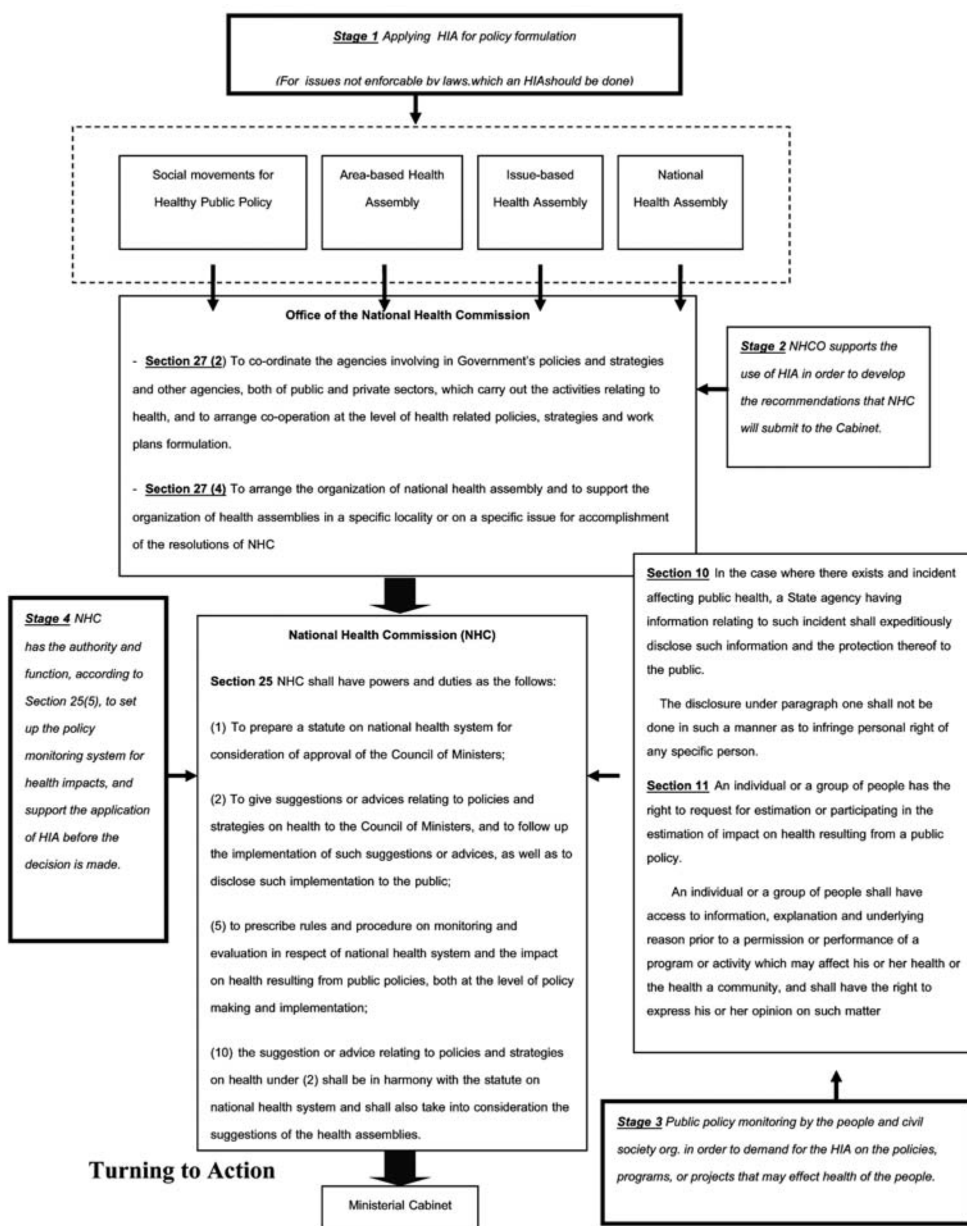
Section 25 (5) National Health Commission (NHC) shall have powers and duties to prescribe rules and procedure on following up and evaluation in respect of national health system and the impact on health resulting from public policies, both in the levels of policy making and implementation.

The purpose of the National Health Act as regards HIA is that it is designed to be a social learning process, allowing all stakeholders in the society to examine health impacts of policies, projects, or activities whether such impacts had already occurred or may occur. The HIA is expected to help discover the most appropriate option in the process of public decision-making.

The HIA is both a social process and a social tool to strengthen people participation in the development of a healthy public policy. Therefore, the institutional structure of HIA, it is felt, does not need another solid and administrative structure. Rather, what is needed is the collective commitment of all stakeholders to apply HIA to protect and support the right to health of the people.

The National Health Act encourages the people to utilize HIA by putting in place several points of entry. HIA can be used through a health assembly process or through the channel of National Health Commission. Such flexibility is shown in figure 3.

Figure 3 The Health Impact Assessment Entry-points in line with the National Health Act



Turning to Action

The 2007 Thai Constitution and the 2007 National Health Act approved the concept of HIA as a tool for joint learning between the beneficiaries of and adversely affected people from any public policy, program, project and activity. In contrast, environmental impact assessment, which has been used in Thailand for a long time, is done to assist the approval process of program and projects, not as a joint-learning process to together develop public policy.

After its use for a period of time, the flaws of EIA became apparent. Public participation in EIA has not been extensive because stakeholders, especially directly affected people have not been able to actually participate. Issues that are evaluated in the EIA do not cover health in the broad sense and health impacts are not seen as important. Concerns of affected people and locally generated knowledge are not taken into account. The fact that project owners or developers are the parties hiring EIA consultants to do the job is perceived as resulting in EIAs that benefit them. Moreover, the determination of the list of projects requiring an EIA is not inclusive enough and thus leaves an opening for some project owners to avoid doing an EIA. For example, some projects have both an environmental and health impact but yet do not fall under the requirement of having to do an EIA, such as in the case of large-scale agriculture that uses agricultural chemicals extensively. Also, the determination of the scope of study, the report approval process, and the monitoring of projects, still lack an opening for the people to participate in terms of expressing their opinions on the assessment study before it is approved by the expert committee which handles the EIA report.

Lessons learnt from such shortcomings resulted in a drive to design an HIA system and mechanism that incorporates a learning process for stakeholders, the aim being that they learn from each other and consequently work together to develop public policy. The design incorporates 3 core values as follows:

1. Adherence to a rights-based framework which includes human rights, other rights as contained in the constitution, and rights to health as contained in the National Health Act.
2. Commitment to good governance which means responsibility to the public, efficiency, transparency, public participation, provision to enhance a sense of security, political ethics, and general ethics, all which would lead to considered decisions that takes into account all relevant factors.
3. Integration of work among agencies both at the state and local governmental organization level, by promoting and supporting the use of HIA in the performance of their responsibilities. The aim being to arrive at decisions that are made with prudence, that considers all relevant factors, and that pays proper attention to the health dimension.

The 3 core values are implemented, using the HIA, through four channels:

1. Integration of HIA in EIA

As stated in the Section 67 of the 2007 Constitution and the 1992 National Environment Quality Act, EIA is a process leading to a decision whether or not a project can be implemented. Opportunities to integrate HIA in EIA can be pursued 2 ways. Firstly, EIA guidelines must cover health issues — the term health as defined

in the National Health Act — and must also give importance to the idea of public scoping. Secondly, at the stage of considering an EIA report, a HIA reviewing process is to be set up to solicit public opinions on the EIAs from the perspective of health impact assessment. Then, the report will be submitted further to the panel of experts.

2. Integration of HIA in the government sector's mandates

Government agencies at all levels have a duty and responsibility for public policy making, whether it be in the area of economics, town planning, transport, energy, agriculture, and public health. Policies in these areas have an impact, both negative and positive, on health. Thus, integrating HIA into the process of pubic policy making will certainly result in policies that are decided upon with care and thoroughness, which in the end will benefit the health of the people.

3. Integration of HIA into the functional system at the local and community level

At the community level, HIA should be promoted to be used as a tool to develop healthy public policy. Two possibilities are suggested:

3.1 HIA done by the civil society organization

HIA at this level aims for the community to consider any project and activity initiated by the community members. Another aim is to be prepared in terms of data and information for use as tools in participatory activities, should there be a policy or project that would negatively affect the community.

3.2 HIA done by the local governmental organization

Because local government has a legal mandate to maintain good quality of life of the people in their responsible area, HIA can be a tool to achieve this mandate. Local governmental organizations can apply HIA to help perform many of their functions: as a tool to enhance learning and participation in the planning and development of area-based healthy public policy; to assist in the issuance of ordinances for controlling activities that endanger the people's health or health hazards; to enhance the quality of public hearings that are allowed for in the constitution.

4. Utilization of HIA in healthy public policy development through the process of health assemblies.

The health assembly process allows the government and people sector to share knowledge and learn from one another's experience in an atmosphere of harmony, in order to come up with healthy public policy proposals. The mechanics of the process is that assemblies are organized systematically, with public participation from three influential social sectors: people/civil society sector, academic/professional, and government officials/ politicians. HIA is an important tool to support the three sectors to exchange knowledge and learn together in the health assemblies, as all have the common goal of achieving good health. Data and information on health impacts generated will make analysis and formation of public policy options more comprehensive and profound. As a result, healthy public policies will be optimized and made more equitable to stakeholders.

However, after 8 years of HIA development in Thailand, that is after the formal beginning of health reform, even though there has been gradual progress in HIA work, but certain limitations were found. From a study on lessons learned following the adoption of the National Health Act and the 2007 Constitution, it was found that the push to use HIA has fallen short of its objectives. That is,

1. Thailand still has limitations and gaps in the organization of a system to promote participatory policy making, in the implementation of relevant constitutional

provisions, in good governance, and in the structure of related agencies. As a result, much remains to be done in developing HIAs as a tool for healthy public policy. Examples of things to be developed further are: discourse and reflection, analytic methods, social communication, and policy window analysis.

2. Due to the problems occurring in the conduct of EIAs, past implementation of public policies and development projects have resulted in negative impacts on the communities, and on several occasions led to conflicts between communities and the government sector and entrepreneurs. As a consequence, the civil society sector would like to use HIA as a power base or tool to protect and fight for their rights. They want to see the form and mechanism of HIA be tailored for enforcement of the law rather than for social learning.

3. There is mistrust of HIA from the government and private sector's point of view. They are suspicious that HIA once established may cause duplication of power and function with the existing authorities, resulting in more complex and lengthy processes.

4. There is a lack of confidence that systematic mutual learning through the methodology developed, and through the participatory process can in actuality influence the process of setting public policy.

The above limitations can be seen as major challenges for the design and development of HIA system and mechanism in Thailand, especially in the area of paradigm and implementation, both which are important levers if one is to solve problems successfully in the Thai context.

At present, there are 4 implementing channels of HIA which are formally overseen by designated agencies. The work is done autonomously and separately. What is needed is a collaborating mechanism to unite the work of the responsible agencies. By doing so, the HIA system will be stronger and more complete.

As for the systematic development of health impact assessment, this can be done by the tool of public policy network whereby a coalition of state and private agencies, academics, and the people sector that are interested to grow HIA is formed. They will then work together to push for HIA development, for example, by developing a mechanism to respond effectively to requests for HIA; developing a method of doing HIA on a continual basis; finding ways to enlist public participation in development of the HIA mechanism; and searching for the best ways to develop capacities and knowledge base on HIA. All these efforts would be supported mainly by the National Health Commission.

Conclusion

Health impact assessment in Thailand was developed according to the idea that protection and enhancement of health is a basic right. The intention of the National Health Act is that HIA is to be a mutual learning process for society, to be developed so that all stakeholders will come together to think about the impacts on health that have occurred or might occur due to implementation of development policy or activity. Such joint deliberation by the parties will, it is hoped, lead to choosing the best policy option which will strengthen and protect the health of everyone in the society. All this means health impact assessment is both a process and a social tool that leads to public participation in healthy public policy making, as well as building equity in health. Such

process need not have a formal management and institutional structure, but it should be a process that everyone accepts and is willing to implement in order to protect their rights and health. As for system development, this is done by establishing a network for health impact assessment, with support from the National Health Commission.

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Enhancing healthy public policies: What experiences can be learned from countries?

Lori Leonard

A case study of the Chad pipeline project

On September 9, 2008, the World Bank announced its withdrawal from the Chad pipeline project. Only a few years earlier the project had been hailed as "groundbreaking" and as a "model" for public-private partnerships around the globe (Maier, 2008). In explaining the World Bank's decision to withdraw from the project, Bank officials cited the government's failure to respect agreements to use oil revenues for poverty reduction projects (World Bank, 2008). There is little dispute about this assessment, including from government officials themselves. What has been overlooked in commentaries and analyses about the project's failure, however, is that multiple policy instruments employed in the project bear on health, not just the policy that required the government to direct oil revenues to the health sector. In this paper, I present empirical data from an on-going, long-term study of the impact of the pipeline project. I argue that an exclusive focus on the lack of direct investments in the health sector unnecessarily narrows the debate about how public policy might be crafted to promote health in this and other large-scale infrastructure projects.

The Chad pipeline project is a $4.2 billion project that officially got underway in October of 2000. The project was a joint venture between a consortium of oil companies led by ExxonMobil, the World Bank, and the governments of Chad and Cameroon. The pipeline project originally included the development of three oilfields in southwestern Chad and a 1,070 kilometer underground pipeline that extends across Cameroon to the Atlantic Ocean. Five oilfields are currently in operation and more are planned. Significant project-related infrastructure was also developed in the oilfield region, including a road network, an electrical grid, hundreds of oil wells, an airstrip, work camps, and a collection and pumping station (Guyer, 2002). The project was expected to produce up to 225,000 barrels of oil per day and generate revenues of $2.5 to $8.5 billion for the government of Chad over the 25 to 30 year life of the

oilfields. Current estimates put production at 170,000 barrels per day, and in 2008 alone Chad's oil revenues were roughly $1.4 billion.

At the groundbreaking ceremony for the project, the World Bank's vice-president for sub-Saharan Africa, Callisto Madavo, said, "The world is watching this experiment closely." World-wide interest in the pipeline project stems, at least in part, from its billing as a "model" for a new genre of development programming. What is this "model?" Over the last several decades, transnational organizations like the World Bank and the United Nations have shifted their focus from directly financing public sector projects in low-income countries to helping those countries gain access to global markets for their raw materials by entering into partnerships with the private sector (Utting, 2000). In Africa, these partnerships have been organized mostly around resource extraction, and particularly oil and gas projects. This shift has been accompanied by the development of global norms in the form of standards, codes of conduct, and other 'soft law' approaches that are used to guide corporate behavior in settings where regulatory capacity is weak (Kirton and Trebilcock, 2004). As alternatives to regulation or legally binding obligations, standards, such as the World Bank's safeguard policies, apply normative pressure on corporations to act in ways that are 'socially responsible.' Public-private partnerships carried out in accordance with global environmental, social, and labor standards are expected to benefit local populations and contribute to poverty reduction.

The pipeline project is the prototype of this new model of development because it is governed by a comprehensive set of policy instruments. These include a *Revenue Management Law* which directs the government of Chad to spend oil revenues in key sectors of the economy, including health, education, infrastructure, rural development, and governance, and the *Environmental Management Plan* (EMP), a 19-volume document that details plans to mitigate a broad range of social and environmental impacts of the project. For example, the *Regional Development Plan* is intended to mitigate the effects of in-migration to the oilfield region by supporting regional economic development projects, while the *Compensation and Resettlement* Plan details methods for compensating farmers whose land is expropriated by the consortium. These and other policy instruments contained in the EMP are designed to adhere to the World Bank's safeguard policies on Environmental Assessments, Natural Habitats, Indigenous Peoples, Cultural Property, Involuntary Resettlement, and Forests Planning.

The research project

Shortly after construction on the pipeline began, I started a long-term research project to trace the effects of the oil and pipeline project on health and social life in Chad. Since early 2002 I have been following households in different localities in Chad as part of a multi-disciplinary research team. Our project presents a contrast to standard health impact assessments, policy evaluation research, or studies of health transition which rely on large-scale surveys to track the prevalence or incidence of specific conditions in well-defined population samples over time. Our study is anthropological in character and is organized around long-term engagement in five field sites where we study change by gathering a diverse collection of data about members of households that we are following over time (Geertz, 1983). The sites

include three villages in the oilfield region that have lost land to the project; a town that was a center of recruitment for the oil companies and that experienced rapid in-migration; and a settlement annexed to the capital city in 2004 that is now being re-zoned and is the site for major government infrastructure projects financed by oil revenues. These sites were selected to provide a comparative perspective of the impacts of the project in localities with very different types of institutional endowments. The localities were also selected because they are sites where different policy instruments and mitigation measures have been employed.

We follow a random sample of 20 to 40 households in each locality - 160 households in total (see Table 1). We maintain household rosters to reflect shifts in household composition as a result of births, deaths, and migrations. When entire households move, we try to follow them in the new locality. Fieldworkers who live in or near the study sites visit households at least monthly and sometimes as frequently as once per week. We conduct household surveys on morbidity, food security, dietary diversity, physical activity, agricultural production practices, labor patterns, and household revenues and expenditures. We have also collected anthropometric and biomarker data and we have interviewed health care practitioners, judicial authorities, laid-off workers, and representatives of civil society organizations. In the village localities, we have mapped and geo-coded farmers' fields, created an inventory of compensation payments, collected soil samples from farmers' fields and conducted tests of the physical and chemical properties of soils. This diverse collection of data allows us to trace the effects of policy instruments as they enter into communities.

The picture of health in the oilfield region

A recurrent problem related to monitoring the health impacts of the project has been the lack of reliable data. This issue came to the fore when health impact assessments were conducted (see Jobin, 2003), and it continues to plague attempts to monitor project impacts (Leonard, 2003). In part, the lack of reliable morbidity data reflects the state of the health care system in Chad. In 2002, only 62 percent (407 out of 657) of primary health care centers in Chad and 64 percent of those in the oilfield region were functional (World Bank, 2004a). Most of these facilities are severely under-resourced and are not able to provide the minimum package of activities. A study published by the World Bank's Development Research Group showed that as a result of "leakage" primary health care facilities receive less than 1 percent of the recurrent, non-wage expenditures of the Ministry of Health (Gauthier and Wane, 2007). User fees are the most important source of revenue for these facilities and, based on our own research, are often used to pay employees, most of whom are not members of the civil service, and to buy medicines, including medicines obtained outside official channels. Diagnostic capabilities are also limited due to the lack of equipment, and this makes it impossible to track rates of particular conditions, since complaints are recorded under broad symptom categories (Leonard, 2003).

Health impact assessments were conducted prior to the official launch of the pipeline project. A team of external consultants identified HIV and AIDS, malaria, and road traffic accidents as the most important threats to health posed by the project (Jobin, 2003). Most of the mitigation measures proposed to deal with these threats focused on protecting workers; workers' family members and residents of the oilfield

region were targeted only in an ancillary way. The measures proposed included the use of protective clothing, the distribution of malaria prophylaxis to "non-immune" workers, the prevention and treatment of sexually transmitted infections (STIs), and food and road safety measures. The consortium collects and publishes data on a limited number of measures of worker health, including road traffic accidents, work-site injuries, malaria, and sexually transmitted infections. Data on HIV and AIDS is not reported. While the consortium sponsors a Community Health Outreach Program and funds non-governmental organizations (NGOs) to provide health education and distribute subsidized bednets and condoms, these activities have been limited and sporadic. No major health promotion or disease prevention initiatives have been launched by the government or the consortium 'outside the fence.'

Data we have collected in our household surveys suggests that acute and infectious conditions are the major causes of morbidity and mortality in all of the study localities, but that clinically chronic conditions are under-reported. Among the most common illnesses reported in our household surveys are gastrointestinal problems, malaria, and dental caries. These kinds of problems are often experienced as chronic conditions; they are not resolved quickly and they affect quality of life and the ability of people to work, study, or conduct everyday activities for weeks, months, or even years. The use of health care facilities for acute illnesses is low (see Table 2). Across the study sites, household members consult a health care practitioner in approximately one quarter of illness episodes. Because most illnesses are never diagnosed, symptom reporting is prominent. Even if people do not consult health care providers, they use commercial pharmaceuticals. This is particularly true in the more urban localities where access to pharmaceuticals is greater and where people have more money to purchase medicines. Most of the medicines people take are purchased in markets and represent self-medication. Few household members report using 'traditional' medicines, such as barks, grasses, and herbs.

Clinically chronic conditions make up a small proportion of the self-reported illnesses in our household surveys - less than five percent overall. Yet, on the basis of biological markers of chronic illness that we collected using an adapted version of the WHO STEPS protocol, chronic illness is likely to be more prevalent than our illness self-reports suggest (see Table 3). The WHO has classified Chad as a country with high infant and high adult mortality, and there is at least anecdotal evidence from hospital admissions that vascular diseases and other chronic conditions are on the rise, particularly in the capital city (Mouanodji et al., 2006). High blood pressure, which affects a significant proportion of adults in all of our study sites, is under-reported by members of our household samples. We found small numbers of cases of elevated cholesterol, glycosuria, and elevated fasting blood sugar in our urban sample. These problems were not reported in our household surveys, although household members diagnosed with these conditions reported symptoms consonant with hypertension and diabetes - including blurred vision, dizziness, fatigue, excessive thirst, and breathlessness.

The picture of morbidity that emerges from household surveys and the collection of biomarker data is consistent with what we would expect based on other data we have collected in the study localities (see Table 4). In the village localities, for instance, the predominance of acute and infectious diseases is consistent with chronic food insecurity, high levels of physical activity, little time spent in sedentary activities, and

a tendency toward underweight rather than overweight or obesity. As expected, we see shifts in all of these measures with urbanization, including the development of markers of chronic illness.

The available data leave no doubt about the urgent need to strengthen the delivery of health services in Chad through effective investments in the health sector. Attempts to do this through the *Revenue Management Law* were not successful, and the reasons for this merit careful analysis. However, direct investments of oil revenues in the health sector are not the only way the project was expected to lead to improvements in health. In the context of the pipeline project, attempts to "mainstream health into public policies" should include attempts to think about how health might be affected through policies that put into operation the World Bank's environmental and social standards. In the next section of the paper I look at just one of these policies - *the Compensation and Resettlement Plan* - and how its implementation is affecting residents in the village localities where land expropriations are taking place. In the study villages the *Plan* (as it is called in the remainder of the paper) is the policy instrument that has had the greatest impact on residents.

Rural livelihoods, income diversification, gender and health

The *Plan* was designed to adhere to Operational Directive (OD) 4.30, the World Bank's social standard on Involuntary Resettlement (World Bank, 2004b). Project land needs were estimated at 2,124 hectares in the EMP; yet by March of 2007 land expropriations had already exceeded that estimate by 65 percent (Esso, 2007; Wroughton, 2007). The *Plan* details how land will be expropriated and describes measures to mitigate the effects of land loss and improve living standards. These include compensating farmers with cash payments and training those who lose access to critical amounts of land in "off-farm" trades or intensive agricultural production methods. The latter are imagined to allow farmers to cultivate their remaining landholdings more intensively even as these training programs operate in the absence of government support for agricultural inputs or infrastructure improvements. Income diversification and improved agricultural production methods are expected to translate into improvements in a variety of domains, including health.

At the same time, the *Plan* is the manifestation of a coherent ideational system (McNicoll, 1994) that is shifting the way people in the oilfield region think about land. Specifically, the *Plan* introduces the idea of individual or private property into villages of the oilfield region, even though land titling is not a goal of the project (and is not possible in southern Chad). The *Plan* references colonial-era land laws in claiming that land in Chad belongs to the state. Compensation is therefore to be paid for farmers' labor costs - not for the loss of land. The *Plan* further stipulates that farmers will be compensated for items lost on "fields," defined as land under cultivation or cultivated in the last agricultural season. Farmers are not eligible to be compensated for items on land left fallow. Compensation is paid to a single individual, and specifically to the individual who cleared the field. Communal or collective ownership or shared claims to land are not recognized. Monetary values are attached to crops, trees, and structures that need to be removed to accommodate project infrastructure. The *Plan* provides formulas for calculating payments so that the process is "transparent" and can be replicated by farmers. In the wake of the *Plan* people have begun to employ tactics

and strategies to stake claims to land in the face of ambiguous and overlapping rights. They erect boundary markers; keep land in use; encroach on neighbors' fields; pick fruits and nuts from trees; and narrate family histories in ways that connect them to others or to particular plots of land. Some of these claims stick; others do not (Peters, 2002). These tactics and strategies have social and environmental consequences.

Tracing these consequences is the focus of our long-term study, but I will mention two of them briefly here. In terms of social consequences, Jacobs (1992) has argued that land reform programs should be evaluated with respect to their effects on both gender and class relations. While the *Plan* is gender neutral on paper, it has not been so in practice. Farmers with larger landholdings and those who can keep a large proportion of their land cleared are most likely to benefit from compensation payments. This favors men, since men have access to more land than women; they have more equipment, including draught animals and plows, and can clear larger surfaces; and they can command the labor of their wives and children. In our village study sites more than 70 percent of compensation payments have gone to men and more than 80 percent of the money paid out in compensation has been captured by men. Even before the pipeline project began, women had been progressively losing control over land as virgin forest disappeared, but this process has been dramatically accelerated by the *Plan*. Women participate in all aspects of agricultural production in southern Chad, and in the past this included clearing virgin forest or *kaga* (Brown, 1991). The person who clears virgin forest is recognized as its owner. Therefore, the availability of *kaga* allowed some women to establish themselves as relatively wealthy, independent farmers who retained control over the land they cleared and passed it down to their children even though in anthropological terms Ngambaye society is patrilineal. Since the last of the *kaga* was cleared in the mid 1980s, it is no longer possible for women (or men) to lay outright claim to land through clearing. Women now have to access land through their husbands or fathers; this access is provisional and has to be renegotiated in each agricultural cycle.

Income diversification is a major policy goal of the pipeline project (World Bank, 2004b). Few permanent jobs are available with the oil companies. Men have been more likely than women to be enrolled in "off-farm" training programs, and even in their conception these programs are largely focused on male-dominated trades, including carpentry, masonry, welding, and motorcycle repair. Women have sought to diversify their incomes by selling food to construction workers and also by selling sex. In other parts of Africa, income diversification schemes have led to the proliferation of income earners within households as both men and women "scramble" to make a living (Bryceson, 2002; Pfeiffer et al., 2007). One consequence of this has been the 'feminization of agriculture' (Berry, 1989) and the impoverishment of single women who, even if they can access land, cannot afford to farm it. Income diversification has also led to greater socio-economic differentiations between households (Peters, 2002). As part of our long-term study we are carefully tracking these processes, which are leading to the re-negotiation of household obligations and shifts in social relations that matter for health.

Conclusions

The "experiment" in development that began in 2000 did not end with the World Bank's announcement in September of 2008. Even as the Chadian government did not invest oil revenues in health or other key sectors of the economy, critical policy questions remain. These include how global norms (O.D. 4.30) made operational in policy instruments (the *Plan*) and disseminated by transnational organizations (the World Bank) affect material and ideational transformations on the ground in ways that matter for health. Through long-term engagement in field sites in the oilfield region, we anticipate being able to follow the implementation of the policy instruments that make up this "model" project through local communities and to trace the ways they continue to shape everyday life, social institutions, and health.

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Table 1 : Descriptive information for the research localities that are part of our long-term study, 2008 census

Research Site	Site A	Site B	Site C	Site D	Site E
Designation	Village	Village	Village	Small town	Urban neighborhood
Number of households enrolled	40	20	20	40	40
Year enrolled	2002	2007	2007	2002	2002
Individuals in household samples	336	168	156	354	375
Average household size	8	8	8	9	9
Members aged 5 or less	65 (19%)	38 (23%)	24 (15%)	46 (13%)	63 (17%)
Members aged 60 or more	14 (4%)	5 (4%)	2 (1%)	18 (5%)	11 (3%)
Female-headed households	10 (25%)	3 (15%)	2 (10%)	7 (18%)	5 (13%)

Table 2 : Reporting of acute illnesses in 16 weeks of morbidity surveys, comparison of rural and urban localities, 2002

Study locality	Site A (n=363)	Site E (n=357)
Number of acute illness episodes	201	174
Proportion reporting no acute illness episodes	61%	60%
Proportion reporting two or more acute illness episodes	16%	6%
Proportion of acute illness episodes practitioner was consulted	24%	26%
Number of sick weeks registered (acute illnesses)	305	286
Proportion of sick weeks in which practitioner was consulted	11%	17%
Proportion of sick weeks in which medications were taken	48%	61%
Proportion of sick weeks medications taken with prescription	9%	15%

Table 3 : The prevaleance of biological markers of chronic disease in household samples in three localities, 2007

Biological marker	Site A	Site D	Site E	Total
18+	(n=123)	(n=141)	(n=142)	(n=406)
High blood pressure	21 (17.1%)	26 (18.4%)	23 (16.2%)	70 (17.2%)
'Borderline high' total cholesterol	-	-	6 (4.2%)	6 (1.5%)
30+	(n=74)	(n=85)	(n=74)	(n=233)
High blood pressure	18 (24.3%)	23 (27.1%)	21 (28.4%)	62 (26.6%)
Glycosuria	-	-	2 (2.7%)	2 (0.9%)
Fasting blood sugar > 125 mg/dL	-	-	2 (2.7%)	2 (0.9%)

Table 4 : Summary measures of risk factors for chronic illness among adults in three study localities, 2007

	Site A (n=123)	Site D (n=141)	Site E (n=142)
Average age of adult household members	38	38	36
Proportion of household members whose work involves engaging in at least 10 successive minutesof vigorous physical activity	90%	83%	64%
Average number of hours spent in sedentary activities in a 'typical' day	2.2	4.6	7.3
Proportion of household members who currently smoke	9%	4%	7%
Proportion of household members who drink alcohol at least once per week	25%	33%	33%

HEALTH IN ALL POLICIES: perspectives from EU and Finland

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Origin of the concept

When Finland introduced "Health in All Policies" (HiAP) in 2006 as the lead theme for her EU Prsedidency, many people asked what it meant. The answer is simple. The phrase derives directly from the Treaty of the European Union (Amsterdam 1997) article 152, which states: "A high level of human *health* protection shall be ensured *in* the definition and implementation of *all* community *policies* and activities (italics added) . This obligation and mandate gives the EU great potential to improve health and its equitable distribution by influencing various determinants of health which often lie outside the health sector. The existing potential had not been fully exploited, and the idea behind HiAP was to facilitate putting the principle into practice.

Background: WHO, Ottawa, and Adelaide

The basic concepts and principles are not new. The concept of intersectoral action for health was introduced by WHO in the 1980s, when Primary Health Care (PHC) in the broad sense of the word, together with intersectoral action, where seen as keys to Health for All (HFA). In 1986 the WHO International Conference on Health Promotion endorsed the now classic Ottawa Charter for Health

Promotion. The first of the five areas for action was "Build Health Public Policy", which aimed to:

- put health on agenda of policy makers in all sectors and at all levels
- combine diverse but complementary approaches including legislation, fiscal measures, taxation and organizational change

- identify obstacles to the adoption of healthy public policies in non-health sectors, and ways of moving them
- make the healthier choice the easier choice for policy makers as well.

Two years later, in 1988, the second WHO International Conference on Health Promotion was held in Adelaide, South Austalia. It focused on this area of action and produced important recommendations on building health public policy.

The three concepts or principles mentioned above - intersectoral action for health, building healthy public policy, and HiAP - mean more or less the same, and can be used interchangeably. They all look at population health from a broader perspective than health care alone, and focus on influencing determinants of the level and distribution of health.

Review of recent developments in the EU

The EU Presidency the of HiAP was partly a direct continuation of the UK Presidency's theme "Health inequalities:a challenge for Europe", since intersetoral action is necessary not only to improve health levels but also, in particular, to reduce inequalities.

The main health event during the Finnish Presidency was a high level Conference on HiAP held in Kuopio on 20-21 September 2006. It was preceded by a number of policy dialogues held in Brussels to explore and pave the ground, and involved nearly all member states of the EU in the preparations. In collaboration with the European Observatory on Health Systems and Policies, a major publication was compiled as an updated synthesis of knowledge and recent developments in the area (1). The book was made available before the conference and covered the following themes:

- HiAP: the wider context
- sectoral experiences (heart health, world of work, food and agiculture policy in the EU, alcohol policies, and envirnoment and health)
- health impact assessment (tools and applications)
- conclusions and the way forward

Due to a constant, enduring demand, the book will updated and complemented by the end of this year.

Policy implications

The Council of Health Ministers of the EU approved the conclusion on HiAP with recommendations to the Commission and the Member States on 30 November 2006. Even more importantly, the Commission included the HiAP approach to its consultative document on a reflection process for a new EU health strategy. Finally, the new EU Health Strategy (2007) contains HiAP as one of its three cornerstones.

However, the proof of a policy is not in its design but in its implementation. Despite growing bodies of evidence and experience from successful interventions in various areas (1, 2), the major challenge in this field is to fill the implemntation gap, and move from rhetoric to reality. This requires skilful leadership, advocacy, and diplomacy from the public health community; and involvement of all stakeholders from governments at different levels, research institutions, voluntary organizations, and

public and private bodies. All this can be done but it takes a lot of time and effort.

Priorities have to be clear and focus needs to be maintained on doing what is feasible - small steps in the right direction are often better than trying to wage a war on all fronts. Because policy environments and styles vary greatly between countries, the context is very important, and there are no “one-size-fits-all”-solutions.

Some Finnish experiences

In Finland, the country I know best, we started policy endeavours in line with intersectoral action for healh early on, in early 1970s, for obvious reasons. Finland was faced with a burden of NCD and injuries/accidents more heavily than any other nation in the world, and the trends were alarming.

It took some 15 years to cover the main fields of action to tackle the challenges of cardiovascular health, smoking control, food and nutrition policies, and injury prevention. This was documented for the Adelaide conference in 1988 (3). Now, some 20 years later, the record is very encouraging in most of the focal areas of action. In the last 30 years coronary heart diasese and stroke mortality have come down nation-wide by 70-80%, mainly due to changes in diet and smoking patterns but more recently due to medical advances as well. The trend in lung cancer mortality, which was the highest in the world in the late 60s and still growing, was reversed in the late 70s and has continued to decline since then (4). Even in an extremely complex field like suicide prevention, a mutisectoral program achieved a 20-30 % reduction reduction among young males within 10 years (5).

In our experience the greatest progress has been possible in areas where the interests of different participants are moving in the same direction. Traffic safety and prevention of accidents at work are cases in point. But even when it is more difficult to agree on common objectives, such as in food and nutrition policies, progress can be made. In our case, for instance, it has not been feasible to introduce targeted taxes or any other desirable major legislative changes. Nevertheless, major dietary changes towards loweer animal fat intake took place through perseverance and consistent dissemination of public information, not only through public media, but also, and most notably, by enlighted women’s magazines and organizations. Two examples will illustrate how consumers modified their behaviour according to recommendations.

The proportion of adults using butter as a spread on their daily bread dimished from over 60% to 10% in less than 10 years in the 1980s (6). Even more interestingly, food producers anticipated changes in consumer demand and modified their supplies accordingly. The prime example was in the pork meat and pig-breeding industry, where the fat content of the Finnish pork meat diminished by a half in three decades (7).

However, in addition to such success stories, there have also been serious failures. The gravest one in Finland has been in the field of alcohol policy. Alcohol is a major public health issue closely linked to violence and accidents of all kinds, and contributes considerably to social inequalities in health. To date, despite many serious endeavours and approaches, purely fiscal considerations have dominated policy-making in this area.

Future persapectives: Europe and the wider world

I see two challenges for Europe that are of paramount importance. First, the dominant paradigm of health policy should move from dealing mainly with consequences of ill-health to dealing more with determinants of health and ill-health. This is particularly relevant for many of the new member states of the EU and countries farther in the east, where serious levels and patterns of death, disease and injury cannot be solved by curative appraoches alone. Second, the grave inequalities in health, whether between nations in Europe or between socioeconomic groups within nations, cannot be tackled by sectoral measures alone. To level off social gradients we must build healthy public policies in practice. The health sector in itself should be an active advocate and change agent in this direction. It has to strengthen its own capacity to deal with other sectors and participants who have legitimate, sometimes very different, interests. Without dialogue and diplomacy one cannot achieve health in all policies.

In addition to the recent European interest raised by debates on health inequalities and HiAP, I am confident the recently published work by the WHO Commission on Social Determinants of Health (8) will provide a strong further impetus in this direction.

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Enhancing public health through food and agriculture policies

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Introduction

Strengthening the link between health and other policy sectors is seen as an increasingly important means of improving population health. The aim is to examine determinants of health that can be changed to improve health but which are mainly controlled by the policies of other sectors. There have been several approaches that have been proposed, for example healthy public policy, inter-sectoral action for health and health in all policies (HIAP). They all share the core objectives of integrating health considerations into policies beyond the health sector, and taking a horizontal approach to developing health-related strategies.

The purpose of this talk is to highlight how agriculture and food policies can be assessed and enhanced to improve nutrition and public health, using examples mostly from the European Union.

The importance of agriculture and food supply to population health

Food and nutrition are slowly rising on the global political agenda because nutrition-related non-communicable diseases such as cardiovascular disease, diabetes and some cancers cause a significant burden of disease in terms of ill health and premature death[1]. Chronic non-communicable diseases are the major cause of adult illness in all regions of the world, responsible for an estimated 35 million (or 60%) of all world deaths in 2005 [2]. Worldwide traditional diets rich in fruit and vegetables, are being replaced by diets increasingly containing low energy dense, high animal fat foods [3]. These changes are likely to lead to increased rates of many non-communicable diseases in Thailand and other countries previously protected by more balanced diets. The rapid dietary transition and reduced levels of physical activity, especially in urban areas, are contributing to the rapid rise of obesity.

Much of the public debate on how to tackle the rising rates of obesity and non-communicable disease relates to how stakeholders from a range of sectors determine the availability, accessibility and affordability of healthy and less healthy foods. This debate often neglects the obvious effects of changes that have been occurring in both production and consumption of food. This includes the globalisation of trade in food commodities, rapid changes in farming methods, food processing, distribution and 33 A Paxton, The food miles report, SAFE Alliance, London (1994). retail practices, and the influence all these have on relative food prices at international, national and local level[1].

HIAP approaches can support public health and nutrition to reach a higher profile on the political agenda. This approach requires development and refinement of methods for assessing health impacts of policies, and decision support tools to assist policy makers use evidence more effectively. However, this also needs to be supported by inter-disciplinary research concerning health impacts of food and agriculture policies, which has been a neglected research area.

Policies influencing supply and demand of food in the European Union

In the European Union (EU) many policies have a direct impact on nutrition and health. Two of the most important are the Common Agricultural Policy (CAP) in place since 1962 (supply side) and the Health and Consumer Protection strategy (demand side) which was adopted in 2005. The Health and Consumer policy contains several directives which are of importance for food demand, including regulation on Health Claims and Food Labelling.

The demand and supply side policies are interlinked via food safety which usually forms the major basis for any consideration of health issues concerned with food. Both the public and policymakers continue to perceive food safety as the key health issue, probably because food contaminants are beyond consumer control and because of concerns for the competitiveness of European agriculture. Although another obvious connection between the two policies is nutrition, this currently ranks much lower on the political agenda in Europe. Nutrition is still perceived by many as an issue of individual choice. Therefore it does not attract the same level of attention from politicians who maintain that we are living in market where consumer demand for food controls the production and supply, when clearly drivers of food production are much more complex.

The basic aim of many agricultural policies, including the CAP, has been to provide food security for the population. However, since the1970 well-publicised food surpluses created a costly problem for the agricultural sector in the EU. Longstanding incentives for overproduction led the CAP to be reformed in 2003. Today, agriculture policy has additional objectives related to rural development and environmental protection, but not nutrition or human health. The policy focus is the competitiveness and commercial interest of the sector such as food quality standards, agrichemical use, and international trade agreements within the World Trade Organization.

Agriculture policies have profound and complex effects on the food supply as well as on demand because policy gives production or other incentives for many commodities by providing market support. Together, OECD countries plough almost 1 billon dollar a day into agriculture subsidies [4]. This is paradoxical considering the food

surpluses characterising the agricultural sector in developed countries today. Another paradox is that subsidising agriculture can make food more expensive for consumers due to loss of efficiency in production [5], which in itself has a limiting effect on demand [6]. Traditionally in the EU, the most subsidised sectors are cereals, beef, olive oil and milk, whereas production of fruit and vegetables does not receive production incentives [7]. Even commodities like wine and sugar are receiving substantial economic support. A considerable share of the food surpluses in the EU are exported with subsidies, leading to major distortions on international markets, usually to the detriment of developing countries [8]. The rest finds its way into the food chain of Europeans, as subsidised ingredients for high-fat processed foods[9].

Specific food commodities and their public health impacts

Dairy and meat

The dairy and meat sectors are examples of how public health has not been a consideration in agricultural policy in Europe. More than 90 percent of the population consume higher levels of total and saturated fat than the WHO recommendations [10]. Milk fat and fatty meat are rich sources of saturated fat and intake of these foods is generally recommended to be lowered. On the EU market, milk production has for a long time exceeded the domestic demand by approximately 20%, which clearly leads to production surpluses. The market organisation for milk grants export subsidies and aid for butter to the food industry which uses this cheap source for processes food such as biscuits, cakes etc. In this way surplus butter finds its way into the food chain and contributes to cardiovascular disease, diabetes and obesity in Europeans and in developing countries. The experiences from Norway, Finland and Poland show that the lowering of saturated fat intake from animal sources played a significant role in the dramatic decrease in cardiovascular mortality experienced in these countries [11-13]. These national experiences experience should be shared to influence future reforms that tackle the dairy overproduction, which fuelled by subsidies, constitutes a public health problem.

Meat is one of the most subsidised agricultural products in the EU [7]. The aim of the regulation is to stabilise prices [14], and the most important measures employed in the beef sector are import tariffs, export subsidies and support for private and public intervention storage. There has been a growth in global dietary demand for meat especially those in emerging economies such as Brazil. Russia and China. This has been facilitated by changing agricultural practices. The industrialisation of grain production has produced yields sufficient to feed larger numbers of animals than could be raised on grass and traditional sources of forage. Industrial methods of producing and processing animals for food are now well established for poultry, pork and beef in Europe and the USA [15]. This system is characterised by an extensive use of fertilisers, antibiotics and pesticides and results in environmental pollution. This type of production system carries externalities, which means that external costs such as environmental degradation and the consequences for the price and availability of grain for human consumption are not accounted for and consequently not included in the retail price or in analyses of the industry's productivity [15]. The system provides relatively cheap meat for the consumer, raising the demand. The higher intake of

saturated fat contributes to dietary transition, obesity and other non-communicable diseases. A high-meat diet also consumes many more resources than a plant-based diet. Dairy and meat industries are relatively inefficient in terms of land, grain and water use[16]. High-income nations feed over 60 percent of grain to livestock, whereas in developing countries people still consume most grain directly. However, the World Development Report 2008 projected that meat production will have to increase 85% between 2000 and 2030 if it is to meet projected future demands.

Fruit and vegetables

In contrast to other food commodities, EU fruit and vegetable policy has shown greater success integrating health into agricultural policy. On 17th January 2007 the European Commission (EC) presented proposals to reform agricultural policy for fruits and vegetables (FV) [17] in addition to a larger legislative process to modernise the CAP in 2008 [18] .

In contrast to meat and dairy, fruit and vegetable production receives the least support in the EU relative to its market value and the type of support does not give production incentives as in other sectors, although this is the only sector which could justify production incentives (i.e. subsidies) for public health reasons, because fruit and vegetables are undersupplied on the European market relative to dietary recommendations [19], and current low consumption levels. Increasing the intake of fruit and vegetables to 400 - 600 g/day, i.e. a doubling of current intake for many European countries, could decrease the incidence of various cancers, obesity, and the incidence of heart disease and stroke by up to 18 percent [10 20].

Uniquely for European agricultural policy, health has been seen as a key driver of the FV reforms with stated goals which include increasing FV consumption in Europe particularly as an approach to tackle childhood obesity. The European Commission(EC) announced a 60% budget contribution towards promotion of fruit and vegetable consumption as long as this was targeted at children and adolescents. In addition, in April 2007 the EC announced new funding for school FV schemes, which had not been proposed in the initial reforms. Impetus was provided by the EC White Paper on Obesity (2007) stating that “a school fruit scheme would be a step in the right direction”[21].

In June 2007, European Ministers of Agriculture were asked by Agricultural Commissioner M Fischer Boel to back a new ¤103million annual FV school programme requiring co-funding by member states. These plans were rejected but the Commission were asked to conduct an impact assessment of the school FV proposals [22]. Between Sept 2007-May 2008, DG AGRI conducted a mandatory impact assessment process [23] which informed new policy. This assessed the potential impact of a new school scheme on health, diet, agricultural markets, social equality and regional cohesion. It also assessed the value for money and added value of the proposals at an EU level. Stakeholders from the EC DG agriculture together with producers, food processors, public health worked together to push forward agreement by the Member states, EU commissioners, European Parliament to enact a new Council Regulation (EC) on School Fruit Schemes (No 13/2009) on 18 December 2008, allocating Euro 90 million per year from agricultural funds. This policy process is significant as it would be one of the first public health policies organised and funded through the EU agricultural

budget. It has also allowed stakeholders from a range of sectors to successfully demonstrate the benefits of inter-sectoral working that can be developed in other agricultural-health policy initiatives. This funding of 'health promoting policies' from other policy sectors is an important example of new approaches for tackling diet-related disease[24].

In conclusion, the EU CAP with a high degree of market support and border protection is not in coherence with other policy objectives such as those in public health, consumer, environment and development policy. Market support fuels an inefficient overproduction of food and alcohol (except for fruit and vegetables), which eventually finds its way into the human food chain. This process is facilitated by multinational food manufacturers and retailers developing global brand names and marketing strategies shaping consumer preferences. Clearly, effective nutrition and health policies would need to tackle agricultural production, trade, processing and marketing[25].

Health and Consumer protection strategy

The nutritional and health concerns of consumers are currently best addressed by the Health and Consumer Protection directives (for example those on labelling and health claims). Food polices focusing on food safety, public health and consumer protection are located in Department for Health (DG Sanco). The aim is to give increased priority to consumer policy, and to ensure a more effective and co-ordinated approach to consumer interests. The strategies for each of the three policy areas have been developed in a co-ordinated way but are expressed in separate policy documents, although it has not necessarily attempted to coordinate agricultural policies.

Two recent directives are of importance for public health; the directives on Nutrition Labelling and Health Claims. The process for developing and agreeing these have been delayed due to the resistance to some of the proposals by stakeholders representing the different sectors of the food industry. Discussions and disagreements have centred on whether labelling should be voluntary or mandatory, the type of labelling (either guideline daily amounts versus 'traffic light' systems) and the number and nature of nutrients to be included [26]. More than the importance of a consumer's right to information, nutrition labelling is also a potential measure in the overall strategy to combat non-communicable diseases. In an environment with a high availability of food, cognitive control of body weight is required [27] and adequate labelling of food could be one way of ensuring that everyone has the information and tools needed to manage energy balance and improve their health. Consumer organisations have long called for mandatory labelling on all pre-packaged foods and advocate that a simplified labelling scheme should be developed [28]. Even though it is doubtful whether nutrition labelling in itself will lead to healthier food choices in the majority of the population, all efforts should be made to adopt the Nutrition Labelling Directive as soon as possible and in accordance with the demands of consumer groups. In the USA, the requirement of nutrition labelling has stimulated the food industry to reduce the amount of salt, sugar and fat in a wide range of products [29].

Health claims describe a relationship between a category of food, a food product or food constituents and health. Under EU legislation there is no legal definition of a health claim and there are as yet no harmonised rules at EU-level to ensure the scientific

accuracy and appropriateness of health claims. A proposal adopted by the European Commission in 2003 aims to encourage pan-European Union harmonization of health claims regulations [30]. Health claims appear to be effective in getting consumers' attention and influencing their behaviour [31]. Claims are the single most influential factor in consumer choice at point of purchase. The majority of consumers say they trust the claims but do not have good knowledge of nutritional concepts.

To date, there is insufficient evidence concerning effects of health claims on diet and public health [32]. One problematic aspect of the effects of health claims is that their benefits are likely to be restricted to health-conscious, affluent groups who are willing to pay for products with health claims and added functional benefits, and exclude consumers unable to afford premium prices. Another problem is that health claims may have the effect of encouraging excessive intake and over consumption of certain foods by implying that the consumption of a certain nutrient for which the claim is made leads to good health [32].

Article 4 in the proposal for a regulation on nutrition and health claims on foods requires the use of nutritional profiles of food [30]. This is very important from a public health perspective because it prevents "junk food" from being able to carry health claims. Article 4 thus strengthens public health and consumer protection by stating that in order to qualify for a health and nutrition claim, the overall product must meet certain nutritional criteria to ensure that it genuinely contributes towards a healthy and nutritious diet. There continue to be disagreements about the most appropriate methods of 'nutrient profiling', with some versions being developed and endorsed by food industry funded researchers.

Tackling nutrition and health concerns in collaboration with the food industry

The issues of food labelling and health claims illustrate the importance of considering all agendas when developing food policy for health. Many initiatives by the EU and national governments have called for public-private partnerships to tackle the rise of obesity and non-communicable diseases in Europe. For example, DG Sanco set up a public-private partnership called the EU platform on diet, physical activity and health. This round table brings together European-level representatives of the food and drink multi-nationals, advertisers, retailers, fast-food restaurants, the cooperative movement, the consumer movement and health NGOs in order to formulate EU-wide action against obesity. The purpose of the platform is to create a forum for organisations to commit to concrete actions designed to contain or reverse current obesity trends. Under the leadership of the European Commission, 'examples' of coordinated but autonomous actions are volunteered by different platform members and a project database has been created. There has been slow progress to date in committing to action, with each actor being responsible for reporting what they do. The monitoring programme to date has not evaluated any impact of the supposed commitments made. In 2005, the Commission threatened to introduce regulation of food and drink promotion if voluntary action by the industry did have any effects. Voluntary approaches have been called into question by a number of studies including an analysis of the commitments and practice on diet, physical activity and health of 25 of the worlds largest food companies [33]. This report showed that the majority of the 25 had made

general statements about diet and health, but less than half had made any policy commitments, and only four had stated support for a voluntary code on advertising to children. Clearly, the major issue in such approaches is the potential for serious conflicts of interest with having partners from some food industry companies, such as soft drink manufacturers and fast-food retailers, to reduce childhood obesity when their products are recognised as the leading cause of energy-dense and nutrient-poor foods and beverages in childrens' diets.

The food industry has an enormous potential to improve the composition of diets and to reduce energy density by lowering the amount of fat, sugar and additives in foods. Furthermore, food additives designed to enhance flavour, colour, texture and taste have been suggested to contribute to over consumption [34]. In the United States about 10 000 new processed food products are introduced every year and almost all of them contain food additives. Progress has been made already, for example the cooperation between the UK Food Standards Agency and parts of the food industry to reduce intakes of salt, fats and sugar by reformulating processed foods and reducing portion size [35]. However, there is a risk that the sugar and fat removed is used for the production of other energy-dense types of foods and aggressively marketed to vulnerable groups such as children[25].

Many national governments in Europe have also created obesity strategies together with the food industry. The English Department of Health's recent obesity strategy is focused on personalised advice and support, to reduce overweight through individual behaviour change. This includes a new £75million campaign to promote healthy lifestyles called *'Change 4 Life'* which will involve partnerships with companies in the food, advertising and broadcasting industries. http://www.dh.gov.uk/en/News/Currentcampaigns/Change4Life/index.htm. There are already concerns that there are no standards to ensure meaningful commitments from both industry and NGO's, and to protect the new campaign brand. Although a mutli-sectoral approach is an important concept of the health in all polices approach, there is a danger of believing that we can work with industry without explicit rules of engagement. We seem to have forgotten lessons that public health learned in the battle for tobacco control.

CONCLUSION

Agriculture and consumer policy has a strong influence on what and how much food is produced, how it is produced and promoted as well as the price of food. These policies are therefore key determinants of what people eat. Yet many policymakers and administrators outside of the public health sector continue to advocate that diet is merely a matter of personal choice, focussing on what individuals demand and not on the supply side factors that might assist or impede healthy choices[25]. There still exists an illusion of a perfectly functioning market, particularly expressed by the food industry, where it is hypothesised that demand controls supply and it is often heard that "we are only producing what people want". But agricultural economists agree that the market is highly distorted [5].

Despite the health sector continuing to point out negative health impacts in EU policy, so far there has been little evidence of any change. Opportunities and challenges exist for including health in the wider policy-making process. In addition to strengthening knowledge of the determinants of health, new partnerships often need to

be established and a range of different skills may be required that are not always present in current public health, government or public sector organisations. Although there is usually a need to develop capacity for inter-sectoral working there are often a range of potential mechanisms, including cross-governmental committees, that already exist that can facilitate an inter-sectoral public health approach, as well as developing new, more formal approaches such as health impact assessment.

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I wish to acknowledge the support and contribution of my colleagues Liselotte Schafer Elinder (Sweden), Mojca Gabrejelcic Blenkus (NIPH, Slovenia). Some of this draws on work we contributed to the Health in all policies initiative coordinated by the Finnish Government in 2006[25] .

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Lincoln C. Chen
President
China Medical Board of New York

Lincoln Chen is President of the China Medical Board. Started in 1914, the Board was endowed by John D. Rockefeller as an independent American foundation to advance health in China and Asia by strengthening medical education, research, and policies.

In 2001-2006, Dr. Chen founded and directed the Global Equity Initiative of Harvard University's Asia Center, and in an earlier decade 1987-1996, Dr. Chen was the Taro Takemi Professor of International Health and Director of the university-wide Harvard Center for Population and Development Studies. In 1997-2001, Dr. Chen served as Executive Vice-President of the Rockefeller Foundation, and in 1973-1987, he represented the Ford Foundation in India and Bangladesh.

In 2007, Dr. Chen completed service as Chair of the Board of Directors of CARE/USA, one of America's leading international relief and development organizations, and in 2008, he assumed the Chair of the Board of BRAC USA. He also serves on the Board of the Social Science Research Council, the Institute of Metrics and Evaluation, the Public Health Foundation of India, the Carso Instituto de la Salud, and the UN Fund for International Partnership (counterpart to UN Foundation). In 2004-2007, he was the Special Envoy of WHO Director-General in Human Resources for Health, and in 2006-2008, he was the Founding Chair of the Global Health Workforce Alliance, a public-private partnership based in the WHO.

Dr. Chen is a member of the National Academy of Sciences' Institute of Medicine, the American Academy of Arts and Sciences, the World Academy of Arts and Sciences, and the Council on Foreign Relations. He graduated from Princeton University (BA), Harvard Medical School (MD), and the Johns Hopkins School of Hygiene and Public Health (MPH).

Carlos Dora
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Healthy Environments
World Health Organization

Dr. Carlos Dora, is a medical epidemiologist and health in other sectors policy expert at the World Health Organization headquarters in Geneva, where he leads the unit on Interventions for Healthy Environments. The unit covers three areas: health impacts of sector policies especially transport and energy policies, strengthening governance mechanisms and national systems to manage environment health risks, and occupational / workers health. Dr. Dora's own work focuses on the environmental health impacts of non-health sector policies including health impact assessments and on EH risk governance. He was previously at the European Centre for Environment and Health in Rome, working on international policy frameworks for environmental health (Protocol on Strategic Environment Assessment. Environmental Health Performance Reviews, Inter-ministerial program on transport health and environment). Before that he worked on environmental health risks assessment (including on the health impacts of chemicals, of the Chernobyl disaster and of depleted uranium in war zones). He has also served as a senior policy adviser to the WHO director General. Before joining international agencies, he worked in academia at the London School of Hygiene and Tropical Medicine, on environmental epidemiology research and training, and before that in the planning and organization of health systems in Southern Brazil. He is a medical doctor, having practice in general medicine in Brazil and in the UK, he has a Masters degree and a PhD in epidemiology from the London School of Hygiene and Tropical Medicine. His research work focuses on the interface between environment and health science and policy, and publications include a book comparing the communication of health risks by mass media, government, health experts and scientists, a book and papers on the health impacts of transport scenarios. He has been recently collaborating with China, Brazil and other emerging economies in the strengthening of environment and health management systems, and is a visiting professor at the Chinese Academy of Transportation Sciences.

Van S. Hubbard
Director
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Van S. Hubbard, M.D., Ph.D. is Director, NIH Division of Nutrition Research Coordination and Associate Director for Nutritional Sciences, National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health. He is responsible for development of research initiatives and management of research programs related to the nutritional sciences and obesity.

Dr. Hubbard has been at NIH since 1976 in various positions and has attained the rank of Rear Admiral and Assistant Surgeon General within the Commissioned Corps of the US Public Health Service. He currently is chair of the NIH Nutrition Coordinating Committee and also is the Department of Health and Human Services liaison for the Interagency Committee on Human Nutrition Research. Dr. Hubbard serves as the NIH representative on numerous federal and non-federal committees and work groups including various Healthy People 2010 work groups. Dr. Hubbard is the co-lead for the Nutrition and Overweight Focus Area and the development of the Surgeon General's Initiative to address overweight and obesity. In 2005, Dr. Hubbard was selected as the Senior Advisor to the Secretary of DHHS on Obesity in addition to his other positions. Additionally, he serves on several non-federal committees such as the Committee on Nutrition of the American Academy of Pediatrics and the International Advisory Board of the Medical Nutrition Education Project at the University of North Carolina at Chapel Hill. Other professional activities include serving as Professor of Pediatrics at the Uniformed Services University of the Health Sciences.

Dr. Hubbard has received many honors from the US government, such as the Certificates of Appreciation from FDA, DHHS, and USDA. He also has been awarded the USPHS Outstanding Service Medal, three Meritorious Service Medals, and the Surgeon General's Exemplary Service Medal, as well as two DHHS Secretary's Awards for Distinguished Service and three NIH Director's Awards. Dr. Hubbard is a Diplomate of the National Board of Medical Examiners and Fellow of the American Academy of Pediatrics. In 2000, he was made an Honorary Member of the American Dietetic Association. In 2002, he received the George Bray Founders Award from the North American Association for the Study of Obesity. His major research interests are clinical nutrition, obesity, cystic fibrosis, and nutritional modulation of disease risk.

He received his Ph.D. in biochemistry and his M.D. from the Medical College of Virginia, Virginia Commonwealth University. Prior to coming to NIH, he completed an internship and his residency in the Department of Pediatrics at the University of Minnesota Hospitals.

Amphon Jindawatthana
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Dr. Amphon Jindawatthana currently serves as the Secretary General of Thailand's National Health Commission chaired by the Prime Minister. He has 31 years of experience in health policy development, health systems reform, universal coverage and human resources for health. His remarkable work is to develop and advance the National Health Act enacted in March 2007.

His previous engagement included a member of the National Legislative Assembly from 2006 to 2008, the secretary to the Minister of Public Health from 2006 to 2007, the Director of the National Health System Reform Office from 2000 to 2007 and the Director of Praboromrajchanok Institute for Health Workforce Production and Development from 1994 to 1999.

Dr. Jindawatthana has a M.D. and MPH. from Mahidol University as well as MPH. in Health Development from Leopold Institute of Tropical Medicine, Antwerp, Belgium.

Lori Leonard
Associate Professor
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Lori Leonard is an associate professor in the Department of Health, Behavior & Society at the Johns Hopkins School of Public Health. She holds a joint appointment as associate professor in the Department of Anthropology and she is a faculty associate of the Hopkins Population Center and the Center for Global Health. She teaches courses in qualitative research and ethnographic fieldwork, and is a faculty co-sponsor of an interdisciplinary seminar in Critical Global Health Studies. She received MS and ScD degrees from the Harvard School of Public Health.

Her research interests are in development studies and in medical sociology and anthropology. Since 2001 she has been working on a long-term study of the impacts of a major oil and pipeline project in Chad. The study looks at the social and health effects of the pipeline project, which is governed by a comprehensive set of public policy instruments designed to ensure that the project adheres to global norms for environmental, social, and labor standards, benefits local populations, and leads to poverty reduction. The study is designed as a 25 to 30 year project to parallel the life of the oilfields. Her work in Chad precedes the development of this long-term project. In the late 1980s she taught at the University of N'Djamena as a Peace Corps volunteer, and she later worked in the Chadian Ministry of Health on a project to establish the country's first health information system. She has held two Fulbright Fellowships to Chad, including a New Century Scholar's award. She has conducted research in southern Chad on women's health issues including infertility and female genital cutting, and on risk factors for chronic illness. In the late 1990s she conducted interviews with Sara soldiers who fought in World War II and plans to make a documentary that looks at how their experiences in DeGaulle's army have changed southern Chad.

She also studies U.S. HIV policy and how public policies shape the ways the urban poor experience HIV and AIDS. Currently, she is studying the implementation of the Centers for Disease Control and Prevention's 2006 HIV testing guidelines in Maryland. The state recently changed HIV testing laws to make testing a routine part of medical care. She is interested in how adolescents make sense of the competing messages they receive about HIV in the clinic, where HIV is thought of as a chronic, manageable condition that is no longer 'special,' and in their social worlds. She is also interested in how physicians and physicians-in-training incorporate the guidelines into practice since research has shown that they are influential in adolescents' testing decisions. She recently completed a multi-year study of engagement in care among

HIV positive adolescent girls in four U.S. cities: the Bronx, Chicago, New Orleans, and Miami. She looked at how young women managed demanding therapeutic regimens and the need for regular medical care while living in poverty in states where HIV care and entitlements for the poor were structured differently.

Kimmo Leppo
Adjunct Professor of Public Health
University of Helsinki

Dr. Kimmo Leppo (1943), Finnish, Former Director-General of Health Department at the Ministry of Social Affairs and Health; medicine, social sciences, social medicine; chair or member of numerous national committees, working parties and delegations on health policy development; technical adviser to WHO/HQ and WHO/EURO in a number of fields related to health policies, former member of the Executive Board of WHO; member of social protection committee(SPC) of EU, member of High Level Group on Health Services and Medical Care.

Retired from the DG post late 2007, but is still active nationally and internationally, consulting in selected fields of health policies. “There is no alternative for attaining highest attainable level and equitable distribution of health than HiAP”.

Karen Lock
Professor
London School of Hygiene
and Tropical Medicine

I am Senior Lecturer in Public Health in the Department of Public Health and Policy at the London School of Hygiene and Tropical Medicine. I studied clinical medicine at Oxford, and am a consultant in public health medicine in the National Health Service. I have also been awarded an MA in geography at UCLA, and an MSc and PhD in Public Health at LSHTM.

My current research focuses on upstream determinants of non-communicable diseases. I am working with colleagues worldwide in several projects worldwide developing methods to measure contextual environmental determinants of diet, physical activity, smoking and cardiovascular disease in various populations.

My early research focused on the global burden of disease due to low intake of fruit and vegetables. This work was published in the WHO World Health Report 2002: Reducing Risk, Promoting Healthy Life. With colleagues at ECOHOST, I have subsequently conducted several systematic reviews on the effectiveness of interventions and programmes promoting fruit and vegetable intake worldwide, and am currently involved in the latest update of the Global Burden of Disease study.

I continue to be interested in approaches to support consideration of public health in all policy sectors, and have been involved in the development and application of health impact assessment (HIA). I previously coordinated a project with the WHO European Region and the Ministry of Health in the Republic of Slovenia conducting a HIA of the potential effect of joining the European Union in 2004 on national agriculture and food policies. I have subsequently worked on the improvement of HIA methods, including development of a guide for improving the synthesis and use of research evidence in HIA together with colleagues across London Universities and the London Health Observatory.

I have been involved for a number of years in agri-health research and policy. I have worked with national governments and NGOs in the Europe looking to improve the health impacts of the EU Common Agricultural Policy. In 2007-8, I have been an expert contributor to the European Commission DG Agri developing new policy for school fruit and vegetable schemes (http://webcast.ec.europa.eu/eutv/portal/archive.html?viewConference=5757). Between 2006-8, I was a member of the World Bank-led International Assessment of Agricultural Science and Technology for Development (IAASTD- http://www.agassessment.org/) which was adopted at an intergovernmental meeting in April 2008.

Julian Schweitzer
Director, Health, Nutrition and Population,
Human Development Network
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Julian Schweitzer is the Director, Health Nutrition and Population in the Human Development Network of the World Bank.

Immediately prior to his current appointment, Julian was the Director of the Human Development Sector in the South Asia Region of the World Bank, responsible for the Bank's operations in health, nutrition, population, education and social protection. During his career in the Bank, he has also worked in the Middle East and North Africa, Latin America and the transition economies of Europe, managing operations in health, education, and social protection. He has also worked as the Operations Director in the Bank's East Asia and Pacific region and as the Bank's Country Director based in Russia.

While working in the South Asia Region, he focused on developing sector wide approaches to mobilize external financing effectively in support of a single country health strategy. He restructured and strengthened the Bank's regional HIV/AIDS engagement with clients and external partners, while also strengthening the Bank's advisory and financial role.

He has extensive operational and management experience of health and development issues in different parts of the world. His health sector interests include health finance and health systems strengthening.

Before joining the Bank, Mr. Schweitzer worked in the public and private sectors in the UK and India.

He holds a Ph.D. from the University of London and has authored numerous articles and essays on economic and human development.

Parallel Session 1

Road Safety

Call for a Decade of Action for Road Safety 2010 - 2020: the first Global Ministerial Conference on road safety and beyond.

Saul Billingsley, Coordinator, Make Roads Safe campaign;
Deputy Director, FIA Foundation

The road injury epidemic

Road crashes kill 1.3 million people and seriously injure another 15 - 20 million every year[1], at an economic cost to the developing world alone - where 90% of casualties occur-of up to $100 billion per year[2]. Road crashes are already the leading global cause of death for young people aged 10-24[3], and are forecast by 2015 to be the biggest single cause of healthy life years lost in the developing world for children over the age of five[4]. According to the *World Report on child injury prevention* (2008) published by WHO and Unicef, road crashes now kill 260,000 children every year and injure another 10 million[5].

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[1] World Health Organization

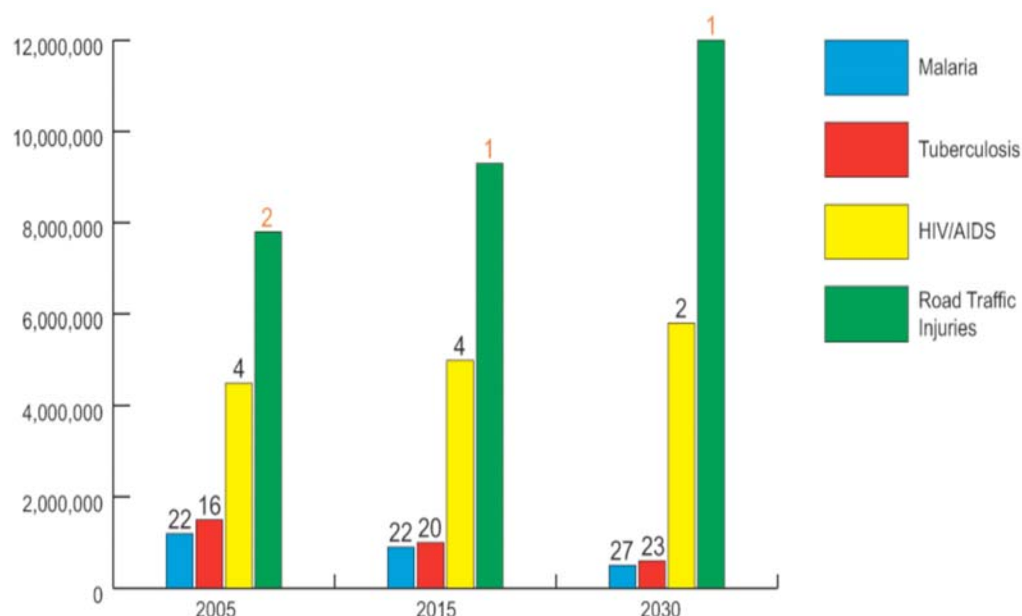
[2] World Bank

[3] World Health Organization, Toroyan T, Peden M (eds), Youth and Road Safety, 2007

[4] Mather, Loncar: Global Burden of Disease, 2005

[5] World Report on child injury prevention, Peden M, 2008
http://www.who.int/violence_injury_prevention/child/injury/world_report/en/index.html

Figure 1: Projected DALYS in developing countries: (children aged 5 - 14)



Source: Mather C, Loncar D, Updated projections of global mortality and burden of disease, 2002-2030: data sources, methods and results, WHO, October 2005

The response by the international community to this epidemic has been woefully inadequate. The role of safe road networks both in delivering services essential to achievement of the Millennium Development Goals and in preventing unnecessary death and injury has largely been overlooked by development agencies, public health foundations and the major development NGOs.

However, as the result of a ten year effort to raise the profile of road safety, described below, the United Nations has now agreed to a first ever global ministerial-level meeting on road safety. The challenge now is to ensure that this meeting, in Moscow next November, marks the start of a more systematic and coordinated effort to tackle road deaths and injuries.

Mobilising for action on road safety: the ten year road to Moscow

One of the first to ring the alarm bell about the global road injury epidemic was the International Federation of Red Cross and Red Crescent Societies (IFRC), when it warned in its 1998 World Disasters Report that "... road crashes are a worsening global disaster destroying lives and livelihoods, hampering development and leaving millions in greater vulnerability." The following year, the World Bank initiated the Global Road Safety Partnership (GRSP) as part of its Business Partners for Development Programme. The GRSP, hosted by the IFRC, brings together business, civil society, and governments to promote sustainable reductions in road crashes in developing and transition countries[6].

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[6] See www.grsproadsafety.org

In 2001 the World Health Organisation, concerned by the lack of awareness of the contribution of road crashes to the burden of disease worldwide, adopted a five year strategy for road traffic injury prevention. WHO stated that "Road traffic injuries are a major public health problem" but the agency acknowledged that they "... have been neglected because injuries have been seen as accidents or random events. Now injuries are known to be preventable." The strategy objectives were to build capacity at national level, to monitor the magnitude of road traffic injuries, to incorporate injury prevention into public health agendas around the world, and to promote action to prevent and control the health consequences of motor vehicle crashes.

The WHO also decided that, in order to promote global awareness of the urgent need to tackle an avoidable public health issue, road safety would be the theme of the 2004 World Health Day. This decision was announced by the then WHO Director General, Gro Harlem Bruntland, at a high level conference in London in February 2003 on global road safety, organised by the FIA Foundation, which brought together experts from the UN, the World Bank, the OECD, research bodies, the private sector, and NGOs including the Bone and Joint Decade and the Taskforce for Child Survival & Development, two early instigators of action at the UN.

A few months later the growing political and diplomatic interest in road safety resulted in the adoption of the first ever UN General Assembly resolution on global road safety (A/RES/57/309 - 22/5/03), tabled by the Sultanate of Oman, which has become a world leader among nations in road safety advocacy. The resolution acknowledged the global scale of road traffic deaths and injuries, and requested a report by UN Secretary General, Kofi Annan. Published in August 2003, this report recognised that the road safety efforts of the UN and other stakeholders had "remained fragmented" and recommended that a coordinating body be created within the UN system and that road safety be integrated into other polices, "... such as those relating to sustainable development, the environment, gender, children or the elderly."

In April 2004 the World Bank and the WHO published *the World Report on road traffic injury prevention*. This groundbreaking report highlighted that more than 85% of the 1.2 million people then killed and 50 million injured around the world in road traffic crashes are in low and middle income countries. Launched by then French President Jacques Chirac on World Health Day in Paris, the report warned that road deaths are forecast to double by 2020 and made recommendations on how countries can begin to reverse the largely avoidable rising tide of traffic injuries[7].

One week after World Health Day, the UN General Assembly held its first ever plenary debate on the issue of road safety. Addressed by 20 countries and leaders of the WHO, UNICEF, and the World Bank, the General Assembly adopted a resolution on ùImproving Global Road Safety' (A/58/289 11 May 2004). The resolution invited the WHO to serve as coordinator within the UN system on road safety issues. In response to its new role the WHO established the UN Road Safety Collaboration, which brings together UN agencies and regional commissions, governments, NGOs, and the private

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[7] World Report on road injury prevention, Peden M (ed), 2004
http://www.who.int/violence_injury_prevention/publications/road_traffic/world_report/en/index.html

sector, providing a platform for dialogue and coordination. The UN Road Safety Collaboration is co-ordinating the production of a series of good practice guides on the main risk factors of non use of seat belts and helmets, excessive alcohol and speed, on low cost infrastructure measures, and on data collection. This series is co-published by the WHO, the World Bank, the GRSP, and the FIA Foundation[8].

The important leadership role being played by the WHO in global road safety was also formally endorsed by Health Ministers at the 2004 World Health Assembly. The resolution urged governments to integrate traffic injury prevention into public health programmes, to facilitate multisectoral collaboration, and proposed the creation of a fund to increases resources for global road safety (Source: WHA resolution 57.10 22/5/04).

In October 2005, the UN General Assembly adopted a further resolution on global road safety. The General Assembly accepted a proposal submitted by the UNECE to hold the first UN Global Road Safety Week in April 2007. The UN Resolution also agreed to recognize the third Sunday in November every year as a World Day of Remembrance for Road Traffic Victims.

Mobilising resources to implement the recommendations of the World Report is clearly an enormous challenge. The resolutions of both the UN General Assembly and the World Health Assembly recognised the need for new financial resources for global road safety. Unfortunately, no funding mechanism existed to serve this purpose. This obstacle was overcome in November 2005, when the World Bank announced the creation of a Global Road Safety Facility[9] with the goals of strengthening global, regional, and country capacity to support sustainable reductions in road deaths and injuries in low and middle-income countries; increasing road safety investment in low and middle-income countries; and accelerating safety knowledge transfer to low and middle-income countries. To date, the Facility has received funding totaling US$16 million from the Governments of Australia, Netherlands and Sweden, the FIA Foundation and the World Bank itself. Other significant funding for global road safety has come from the Global Road Safety Initiative (GRSI), a consortium of seven leading car and oil companies, which together committed US$ 10 million to a five year road safety programme, and the Bloomberg Foundation, which in 2007 granted US$ 9 million to the WHO to conduct a global status report and targeted country programmes.

[8] UN Road Safety Collaboration manuals are available at http://www.who.int/roadsafety/en/index.html

[9] See www.worldbank.org/grsf

The Make Roads Safe campaign

Following these positive developments the FIA Foundation took the initiative to establish the Commission for Global Road Safety, under the Chairmanship of Lord Robertson of Port Ellen, the former secretary general of Nato, with the main objective of sustaining political momentum in favour of action to tackle road traffic injuries and the implementation of the World Report.

The Commission's report, *Make Roads Safe: a new priority for sustainable development* was published in June 2006. The report fully endorsed the conclusions of the 2004 World Report, highlighted that road safety had been overlooked as an issue relevant to the achievement of the Millennium Development Goals (MDGs) and made three principle recommendations:

- That a $300 million, 10 year Action Plan to improve road safety in developing countries be supported by major official and private donors;
- That road projects in developing countries funded with overseas development aid must include a minimum 10% for road safety improvements including engineering measures, safety rating and assessment, and wider community based road safety initiatives;
- That a first ever United Nations Road Ministerial Road Safety Conference should be convened to coordinate an international approach to road traffic injury prevention.

The Commission for Global Road Safety also launched the Make Roads Safe campaign[10], the first international campaign for global road safety, to advocate for the report's recommendations. The Make Roads Safe campaign, working in partnership with the WHO and many road safety organizations, worked to raise the profile of road safety, securing support from leading public figures and a million name petition calling for a UN Ministerial. In March 2008, in response to this campaign, the UN General Assembly unanimously adopted draft resolution A/62/L.43 (resolution 62/244), sponsored initially by the Sultanate of Oman and the Russian Federation, which approved the proposal to hold a Ministerial meeting in Moscow in 2009.

A proposed outcome of the Global Ministerial Conference: A Decade of Action

It is very important that the momentum described above is maintained at the forthcoming UN-approved First Global Ministerial Meeting on Road Safety, which will be hosted by the Russian Federation at the Kremlin Palace in Moscow on 19/20 November 2009. This meeting can and must mark a step-change in the seriousness with which the international community responds to road traffic injuries.

[10] See www.makeroadssafe.org and www.commissionforglobalroadsafety.org

In advance of the Moscow Conference the Commission for Global Road Safety and the Make Roads Safe campaign are advocating that a 'Decade of Action' should be adopted with the aim of reducing the projected increase in road traffic fatalities by 50% from its anticipated 2020 level. This would set a performance target for the international community and build on the existing casualty reduction targets already adopted in various world regions. The European Conference of Ministers of Transport adopted in 2002 the target to achieve a 50% reduction in the 2000 fatality level by 2012 and the European Union has adopted a similar goal to be achieved by 2010. Ministers of Transport from the Asia Pacific Region meeting in Busan, South Korea, in November 2006 set a target of cutting deaths by 600,000 by 2015.[11] African Ministers of Transport and Health have adopted a target to reduce by half road traffic deaths by 2015. The Commission's proposal, which would follow the trend to these existing targets, will therefore encourage a decade of sustained action to improve road safety from 2010 to 2020.

Why a Decade of Action? The campaign believes it is a useful way to focus attention and introduce some structured accountability for the international community's response to road injury. It is instructive to compare the current level of this response to road traffic injuries with Malaria, which kills on a similar scale (see Figure 2). During the 1990s the need for action on Malaria was increasingly recognised as important element in health and poverty strategies, and high level ministerial conferences in 2000 and the G8 summit in 2001 paved the way for the UN Decade to Roll Back Malaria 2001-2010. The Malaria Decade, and indeed the overall effectiveness of the fight against Malaria, has its critics, yet it is undeniable that the international profile of, and action on, Malaria have been transformed over the last ten or fifteen years. Combating Malaria has also been seen as integral to MDG delivery. The Global Fund for HIV/AIDS Malaria and TB has approved funding of more than US$ 300 million for Malaria prevention in Asia alone.

The Make Roads Safe campaign believes that the response of the international community to Malaria sets a precedent for action to tackle global killers of this scale. Yet by comparison road safety receives little international policy profile and therefore there is a marked lack of urgency in responding to road traffic injuries. With no international support or pressure for action on road safety, road injury prevention remains a low priority for all but the most enlightened governments in the developing world. It is perhaps understandable that governments grappling with many pressing social priorities, and with limited resources to tackle them, should marginalize road safety. Yet most of these governments have existing resources available for road construction and policing that could be much more effectively deployed in a way that improves road safety. The political awareness and human capacity and knowledge to introduce these changes are lacking. Even international institutions that might be expected to advise on these road safety measures lack capacity. The World Bank and regional development banks (like the Asian Development Bank) lend billions of dollars for road construction and upgrading projects, yet of these institutions only the World Bank has a dedicated road safety expert on its staff. Sadly this lack of capacity can result in road upgrades that actually exacerbate the road injury problem.

[11] http://www.unescap.org/unis/press/2006/nov/g_57_mct_27_06.pdf

Figure 2: A Hidden Epidemic: leading causes of mortality, 2002

Rank Deaths	Cause	Proportion of total (%)
1	Ischaemic heart disease	12.6
2	Cerebrovascular disease	9.7
3	Lower respiratory infections	6.9
4	HIV/AIDS	4.8
5	Chronic obstructive pulmonary disease	4.8
6	Perinatal conditions	4.3
7	Diarrhoeal diseases	3.3
8	Tuberculosis	2.7
9	Trachea, bronchus, lung cancers	2.2
10	Road traffic injuries	2.1
11	Diabetes mellitus	1.7
12	Malaria	1.6

Source: Mathers c, Loncar D. Updated projections of global mortality and burden on disease, 2002-2030: data sources, methods and results, WHO, October 2005

There are many examples from both industrialised and developing countries of how determined political leadership can rapidly result in significantly improved road safety. France cut its road fatalities by almost half between 2002 - 06 as a result of high profile political prioritisation and a tough regime of police enforcement of driving offences.[12] According to the Vietnamese government, more than 1,200 deaths and 2,200 serious injuries were prevented in the ten months after the government introduced a new mandatory motorcycle helmet law in December 2007[13]. In Costa Rica, the introduction of a compulsory seat belt law in 2004 saw significant reductions in road deaths and a climate that has enabled more far reaching road safety legislation to be enacted[14].

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[12] See http://www.fiafoundation.org/publications/Documents/road_safety_in_france.pdf

[13] See http://english.vietnamnet.vn/social/2008/12/818446/ See www.asiainjury.org for more information.

[14] See http://www.fiafoundation.org/publications/Documents/por_amor.pdf

Interventions such as road design improvements, helmet laws, seat belt, drink driving and speed enforcement have the potential to significantly reduce road fatalities over a ten year period. Furthermore, a new OECD report, *Towards Zero*[15] argues that adopting a 'safe systems' approach to road safety, a holistic policy focus that works towards the objective of a road network design in which infrastructure, vehicles and road users operate together within safety parameters that mitigate against fatal crashes, can pay dividends whatever the stage of economic development within a country. Road infrastructure design improvements perhaps hold the greatest potential for a mass action programme of cost effective fatality reduction. A pilot project by the International Road Assessment Programme (iRAP), which rates roads according to criteria for safety design, maps fatalities and serious injuries across the road network, and makes cost/benefit calculations for fatality reductions based on implementation of proposed countermeasures, has estimated that in Malaysia an investment of US $180 million in road design improvements could deliver US $3bn in benefits and prevent over 30,000 deaths and serious injuries over 20 years *(Vaccines for Roads, iRAP, 2008)*.[16]

A Decade of Action for Road Safety that strongly supports capacity building in road injury prevention, knowledge transfer, and exchange of good practice could significantly reduce the projected increases in road deaths between now and 2020. The Make Roads Safe campaign is arguing that with political will and sustained action the *predicted growth* in road deaths could be reduced by 50% by 2020, so that instead of around 1.8 million people dying each year by 2020, the number could be reduced below 1 million, setting in place a sustainable path to further reductions at very positive cost/benefit ratios. This is the opportunity which the Moscow Ministerial Conference can, and must, seize.

[15] Towards Zero: Ambitious Road Safety Targets and the Safe Systems Approach, Howard E (ed), 2008 http://www.internationaltransportforum.org/jtrc/safety/targets/targets.html

[16] See www.irap.net

Traffic Safety Measures in Japan: An Historical Investigation and Lessons Learned from "Partnership" and "Promotion/Enlightenment"

Hiroshi Ishizuki
Executive Director
International Association of Traffic and Safety Sciences (IATSS)

1. "Partnership" and "Promotion/Enlightenment" are matters of special importance in terms of "Safety Dynamics" of a traffic society

(1) "Partnership" among relevant ministries/agencies and "promotion/ enlightenment" for the public are both themes that are difficult to achieve yet crucial in terms of traffic safety measures. Why are they difficult?-because these issues have to do with reforming factionalism within the government and people's safety consciousness and daily conduct. Why are they crucial?-because these issues hold the key to the success of traffic safety measures.

(2) According to a historical investigation by the author, effective traffic safety measures involve the "creation of safety dynamics"[1] that are strong enough to reverse the tide of pathological phenomena (socially natural phenomena) found in a traffic society.

In particular, for "partnership" to be successful, dynamics and incentives to change people's thought inertia are necessary, and for "promotion/enlightenment" to be successful, dynamics and incentives to change the consciousness and conduct of involved citizens for reforming people's consciousness and conduct are necessary. In this way, both "partnership" and "promotion/enlightenment" are elements that are difficult to achieve yet crucial in terms of "safety dynamics" of a traffic society.

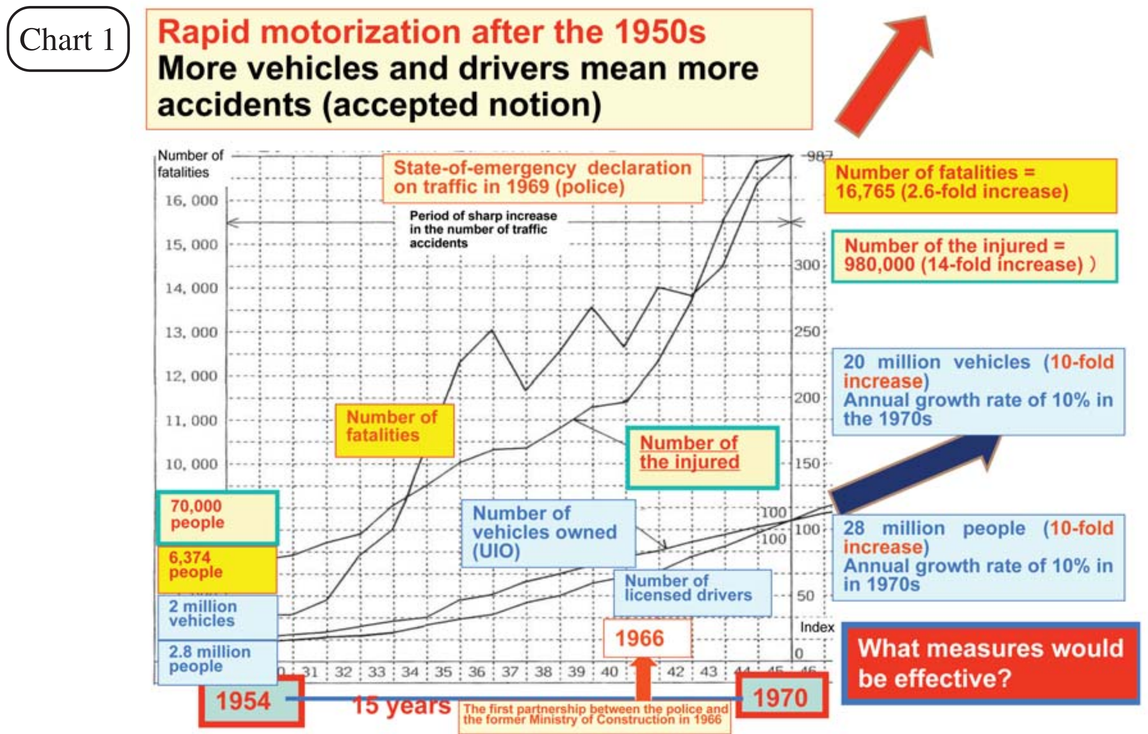
"Safety dynamics" of a traffic society involves various measures that address the problems where they lie, such as enactment of new laws for problem-solving, special mechanisms for promoting measures, improvement of the road safety environment, law enforcement capability of the police, enthusiasm of the people involved in safety issues, ability to carry out safety education, the power of public opinion, emergency preparedness, and competence in the field of health and medical services.

Therefore, in order to enhance the capacity for "safety dynamics" of a traffic society, it must first be clarified where the problems lie. Then to move toward the vision and targets of safety measures required for problem-solving, it is necessary to carry out both "partnership" to unite the energies of relevant ministries/agencies to tackle the problems and vectors of all people involved and "promotion/enlightenment" that is effective enough to energize each citizen to change their traffic safety consciousness and traffic conduct.

(3) One good example of the efforts involving such effective traffic safety measures is the set of measures implemented for the first "traffic war" in Japan in the 1970s. This study primarily investigates their historical development in order to learn lessons from them.

2. The first "traffic war" waged to defy the accepted notion that "more vehicles and drivers mean more accidents"

(1) In Japan, with the rapid growth of motorization starting in the 1950s, fatal traffic accidents increased sharply as dictated by the accepted notion that "more vehicles and drivers mean more accidents." (In about 15 years within 1954 to 1970, the number of vehicles increased approximately 10 times to 20 million while the number of licensed drivers likewise increased about 10 times to 28 million.) In 1970, traffic fatalities reached 16,765 (2.6-fold increase in about 15 years) while the number of the injured also reached 980,000 (14-fold increase).



The first "traffic war" demonstrated that, even if the number of vehicles and drivers increased, the number of accidents could be reduced by implementing safety measures that far outweigh the factors for increased accidents as a national project.

(2) So how did Japan fight the first "traffic war"?

a) Making a social problem into a top-priority issue at the national level

Japan enacted the Traffic Safety Policies Law (1970) to clarify the government's responsibility for traffic safety and established a system that included the Central Traffic Safety Policy Council (headed by the Prime Minister) and 5-year basic plans for traffic safety. With these measures, the "partnership" among related ministries/agencies and "promotion/enlightenment" for the public regarding traffic safety measures showed real effects.

b) Taking specific measures for each high accident-frequency route based on the analysis of the primary cause of increased accidents

To treat an illness, correct diagnosis and appropriate prescription are essential. The same can be said about traffic accidents. Based on the analysis of traffic accident data by the police, the inability of road infrastructure such as signals, traffic signs, guardrails and central dividers to keep pace with the rapid increase in vehicles and drivers was determined (diagnosed) as the primary cause of increased accidents. Strong countermeasures (prescriptions) were taken and continuously administered for each route, based on "partnership" and "collaboration" among the police, road authorities, and others.

c) Deterring potential accidents by taking appropriate responses to drivers posing varying degrees of danger

In "partnership" with the prosecutors' offices and the courts, the police also introduced a traffic violation notification system, which made it possible for the police to take appropriate responses to drivers posing varying degrees of danger. This system has become a deterrent to a wide range of traffic violations and is highly regarded internationally as well.

d) Partnership between the field of health and medical services (the former Ministry of Health and Welfare) and emergency transport organizations (the Fire and Disaster Management Agency of the former Ministry of Home Affairs)

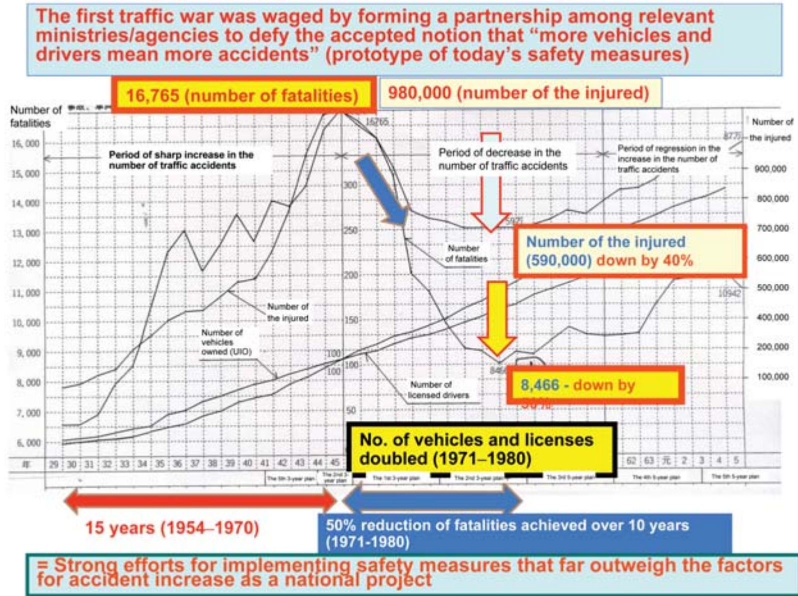
Establishment of a transport system for accident victims and the improvement of emergency medical institutions contributed greatly to lowering the fatality rate. In the former (transport system), any city with a population of 40,000 or more had been required to carry out emergency activities prior to 1970, but the scope was widened to include any city or town with a population between 20,000 and 40,000. Meanwhile, in the latter (health and medical services), an advanced medical emergency center was set up to serve each one million residents (111 locations nationwide).

(3) What lessons were learned from the first "traffic war"?

As a result of these measures, over the following 10 years (1971-1980), the number of fatalities was successfully reduced by half (from 16,765 in 1970 to 8,466 in 1980) with the number of the injured also reduced by 40% (from 980,000 in 1970 to 590,000 in 1980), despite a doubling in the number of vehicles and licensed drivers.

Japan experienced and learned first-hand that the pathological phenomena of increased traffic accidents caused by rapid motorization could be successfully treated by the measures implemented in the first "traffic war," and more specifically that the "creation of safety dynamics" of a traffic society consisted of "partnership" among relevant ministries/agencies and "promotion/enlightenment" for the public, and that accidents could be reduced even if the number of vehicles and drivers increased.

Chart 2

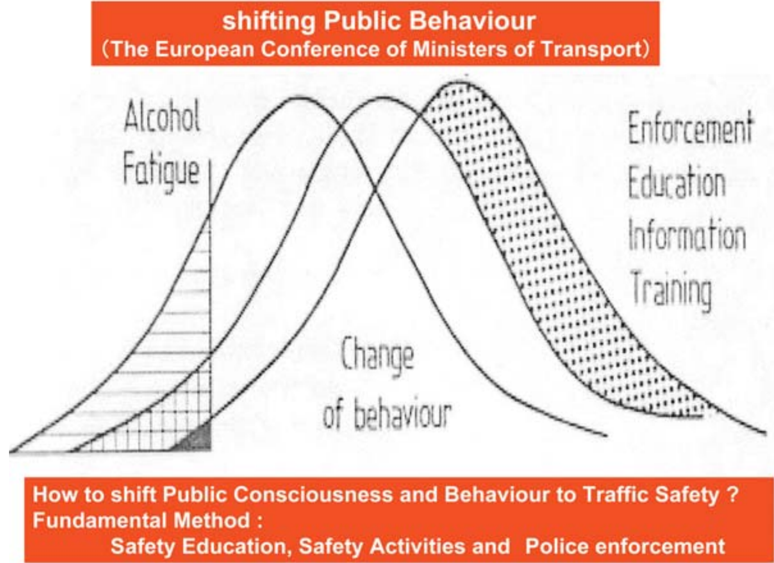


3. A mechanism for moving the "mountain" of national consciousness toward traffic safety (promotion/enlightenment)

It is true for any country that safety education, a national traffic safety campaign, law enforcement, and guidance comprise the basic methods for improving the quality of a safe traffic society.

As mentioned above, the police (maintenance of signals, road signs/markings, etc.) and road authorities (maintenance of sidewalks and guardrails, improvement of intersections, etc.) worked together to promote traffic safety measures, and items such as signals and guardrails were all visible changes to which the public could relate directly in a traffic society. These changes gave a lift to the norms and morale of society as a whole by making an impact on the national consciousness toward pathological phenomena resulting from motorization, raising the level of citizens' interest in traffic safety, and encouraging them to engage in traffic safety activities, among other things.

Chart 3



(1) Traffic safety infrastructure in the private sector: Safe Driving Supervisor System

In Japan, a driving supervisor system for carriers like trucking companies started in 1960, and in 1965 it was mandated by law that any business operation with five or more cars for private use should designate a safe driving supervisor (Article 74 of the Road Traffic Law; violators fined 50,000 yen). Also, a course on safety is offered to supervisors once per year. As of 2007, 6.50 million drivers and 4.66 million vehicles are under the control of this system, which is playing a major role in terms of traffic safety infrastructure in the private sector.

We can add that an office highly conscious of traffic safety tends to form a bottom-up working environment with high worker morale, which turns into important human management resources for management, leading to corporate profits.

(2) Emergency Life-Saving Technician Program and other programs

Based on the track record of lowered number of fatalities and injured between 1971 and 1980 based in large part on the establishment of a transport system for accident victims and the improvement of emergency medical institutions, efforts to reduce the fatalities and the injured have been made continuously during the 1980s and ever since.

The Emergency Life-Saving Technician Program that was launched in 1991, a first-aid measure that was made compulsory for drivers in 1995, and the promotion of basic life-support techniques for local residents and in the school system have all made significant contributions to mitigating injuries caused by traffic accidents. These efforts should be further promoted.

Reference : How is an urban traffic society different between Thailand and Japan?

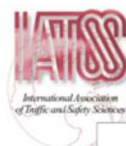
Previous study: “Thailand and Japan: Historical comparison of cars and motorcycles”

- Excerpts from a 2004 study by Kenzo Takeuchi, Ph.D. (Professor in Economics at Tokyo Woman’s Christian University) and comments on the study -

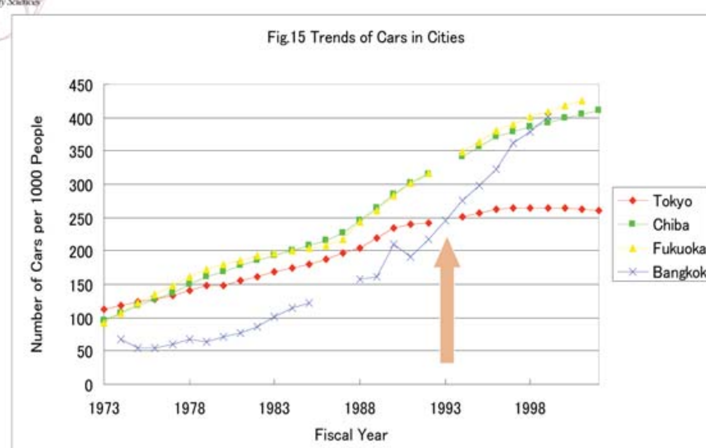
(1) Cars

The number of cars per 1,000 people increased slightly in Tokyo after 1993, but continued to increase rapidly in Bangkok. (However, in some local cities [Chiba and Fukuoka] in Japan, trends similar to the one in Bangkok are observed.)

Chart 4



Trends of Cars in Cities

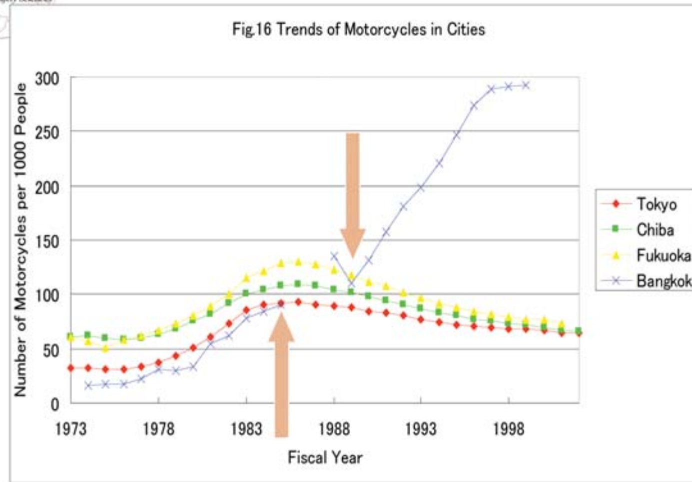


By Kenzo Takeuchi, Tokyo Women’s Christian University, 2004

(2) Motorcycles

The number of motorcycles per 1,000 people took a downward turn in Tokyo after 1985, but continued to increase rapidly in Bangkok.

Chart 5

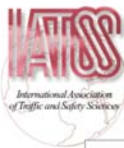


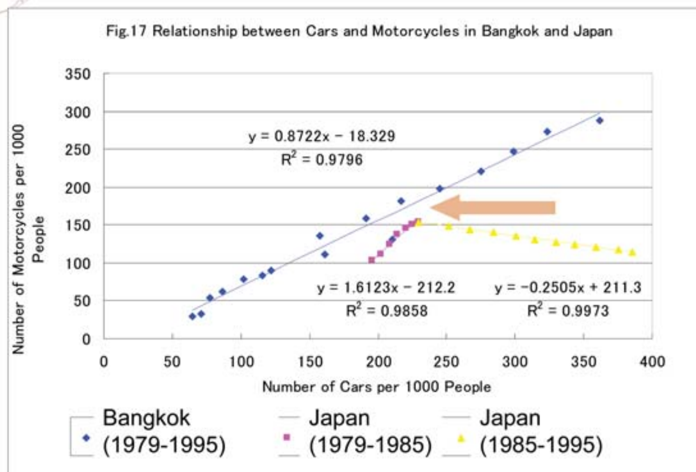
By Kenzo Takeuchi, Tokyo Women's Christian University, 2004

(3) Relationship between cars and motorcycles (Tokyo and Bangkok)

Between 1979 and 1995, cars and motorcycles continued to increase rapidly in Bangkok, while both took a downward turn in Tokyo after 1985.

Chart 6





By Kenzo Takeuchi, Tokyo Women's Christian University, 2004

Comments:

1. The social significance and the functions of cars and motorcycles as urban transportation means may be different between Tokyo and Bangkok.

Japan has been trying to solve the problem of mass transportation such as commuting to school and work by improving the infrastructure of the public transportation system (railways, buses, and subways). As a result, the social significance and functions unique to cars and motorcycles in urban transportation is relatively low compared to Thailand, and the values and lifestyles of people regarding motorized society appear to be different.

Chart 7

Volume of Passenger Transportation in Tokyo
(unit Mil Persons)

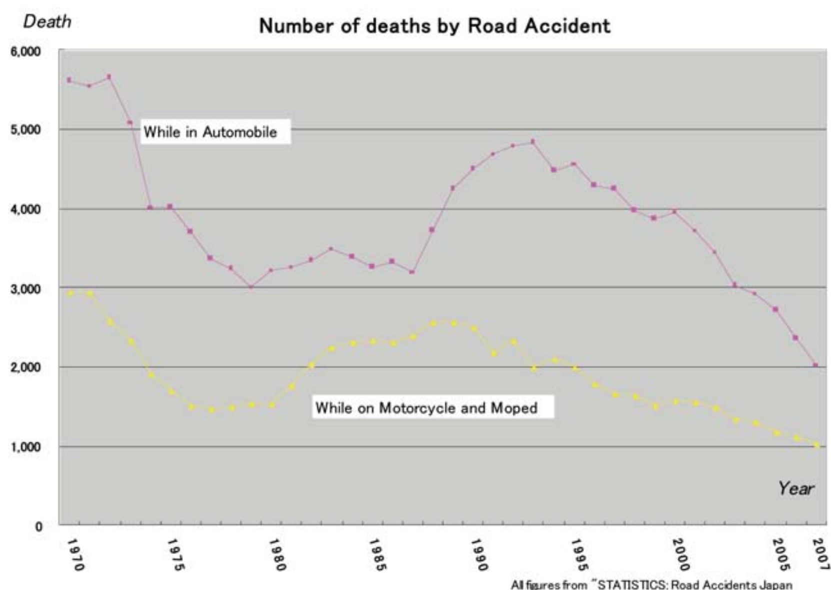
Year	Railways	Road Traffic			Public vs Private
		Bus / Taxi	Private Automibole	sub total	
1970	8,130	2,734	2,557	5,291	10,864 vs 2,557
1980	9,888	2,301	3,965	6,266	12,189 vs 3,965
1990	12,755	2,241	6,936	9,177	14,996 vs 6,936
1999	12,902	1,839	7,664	9,503	14,741 vs 7,664

1, Railway passengers are larger than road passengers.
2, Public transportation is larger than Private Automobile.

Figures from "Statistics Traffic Economy 2001"
Ministry of Land, Infrastructure, Transport and Tourism

2. Accident fatality rate varies greatly depending on the means of transportation (airplane, railway, bus, bicycle, car/motorcycle, and pedestrian). Instead of trying to grasp the problems solely on the basis of the quantitative trend of cars/motorcycles and accident rates, it may be better to build a comprehensive traffic control system by grasping the whole picture of the social, economic, and structural demands of a traffic society in urban space.

Chart 8



Summary

1. The first "traffic war" demonstrated after a great deal of trial and error that "partnership" among relevant ministries/agencies and "promotion/enlightenment" for the public are the crucial issues for the successful implementation of traffic safety measures and that accidents could be reduced by the "creation of safety dynamics" in a traffic society even when the number of vehicles and drivers increase. The challenge for us today is to learn from that experience and history.

2. To successfully implement a "partnership" among relevant ministries/agencies and "promotion/enlightenment" for the public, this investigation suggests the importance of 1) an objective analysis of the causes of traffic accidents based on relevant data (information sharing), 2) consensus on the purposes and methods of safety measures, and 3) well-grounded safety plans and the capability to implement them.

3. It is widely acknowledged in Japan that the measures taken so far by the ministries/agencies in charge of public health contributed greatly to the improvement of the traffic accident situation. However, as we enter a new era of active safety promotion, the role of these measures is radically changing from one of providing medical care after accidents to one of providing measures for the mitigation of injuries, such as wearing helmets, first-aid measures, and accident prevention measures.

In particular, it will be essential to create a database from the information of traffic accident victims (patients) and then utilize it effectively. In other words, to prevent accidents from happening, it is necessary to comprehensively analyze the background information on the causes of fatalities/injuries (vehicles, roads, and people) as well as the police information related to traffic accidents. Japan, for one, will have to take on this issue of cooperation/partnership with relevant medical institutions in the future.

4. International perspectives

(1) Significance of the report on road safety by the World Health Organization (WHO)

The 2004 "World report on road traffic injury prevention" by the WHO illustrates many examples of strategic implementation, practices, and prescriptions regarding safety measures to prevent traffic accidents. People involved with public health including those in Japan should use it as a guidebook on measures for issues to be handled by the responsible centralized agency, "partnership" among relevant ministries/agencies, and "promotion/enlightenment" of the public.

(2) Significance of Safe Communities

This study examined "partnership" and "promotion/enlightenment" at the national level, while the WHO report shows high regard for the road safety activities under the Safe Communities initiative carried out locally by the WHO Collaborating Centre on Community Safety Promotion. The report also points out the importance of ongoing participation in the implementation of safety measures for high-risk groups at the community level as well as "collaboration" (the first of six indicators for certification), and it suggested that these issues be shared internationally in the future.

In this connection, it goes without saying that each country (and region) must come up with its own problem-solving methods in accordance with various conditions and characteristics of the traffic society of the country (region).

(3) Safe Communities starting up in Japan as well

Kameoka City was the first city in Japan (No. 132 in the world) to be certified as a Safe Community and was featured in the government's 2008 traffic safety white paper. The concept is gradually spreading throughout Japan. Allow me to add personally that I am currently assisting Atsugi City as an expert member of the committee for obtaining Safe Community certification.

(4) The noteworthy visionary theory of kinetic energy by William Haddon

In addition, the author is studying social phenomena such as traffic accidents and crimes based on the theory of safety dynamics. From that standpoint, the visionary theory of kinetic energy by William Haddon, the pioneer of "Epidemiology of Injuries," is noteworthy regarding the approach to injury prevention measures.

Notes

1. Concept of "Safety Dynamics"

The term "safety dynamics" was coined by combining "safety" with "dynamics" and is a strategic concept for injury prevention that focuses on the dynamics and the processes of traffic accident phenomena. It consists of three active forces: the active force of publicly-supported safety, the active force of neighborhood safety, and the active force of self-help safety by families and individuals. In order to overcome the kinetic energy which gives form to traffic accidents, a kinematic energy that creates safety and efforts to carry out safety process control/quality control are required. Without them, it is not possible to maintain safety conditions.

A theory of kinetic energy has been developed regarding the approach to injury prevention measures according to the conventional epidemiological model developed by William Haddon (a biomedical engineer with a master's degree in public health), the author of "Advances in the Epidemiology of Injuries as a Basis for Public Policy."

Haddon, W., Jr., "On the Escape of Tigers: an Ecologic Note" (Reference 4 reprinted as an editorial, with three introductory paragraphs and without the readers' quiz.), *Am J Public Health* 60: 2229-2234, December 1970.

The Regional Committee for Road Safety in Latin America and the Caribbean

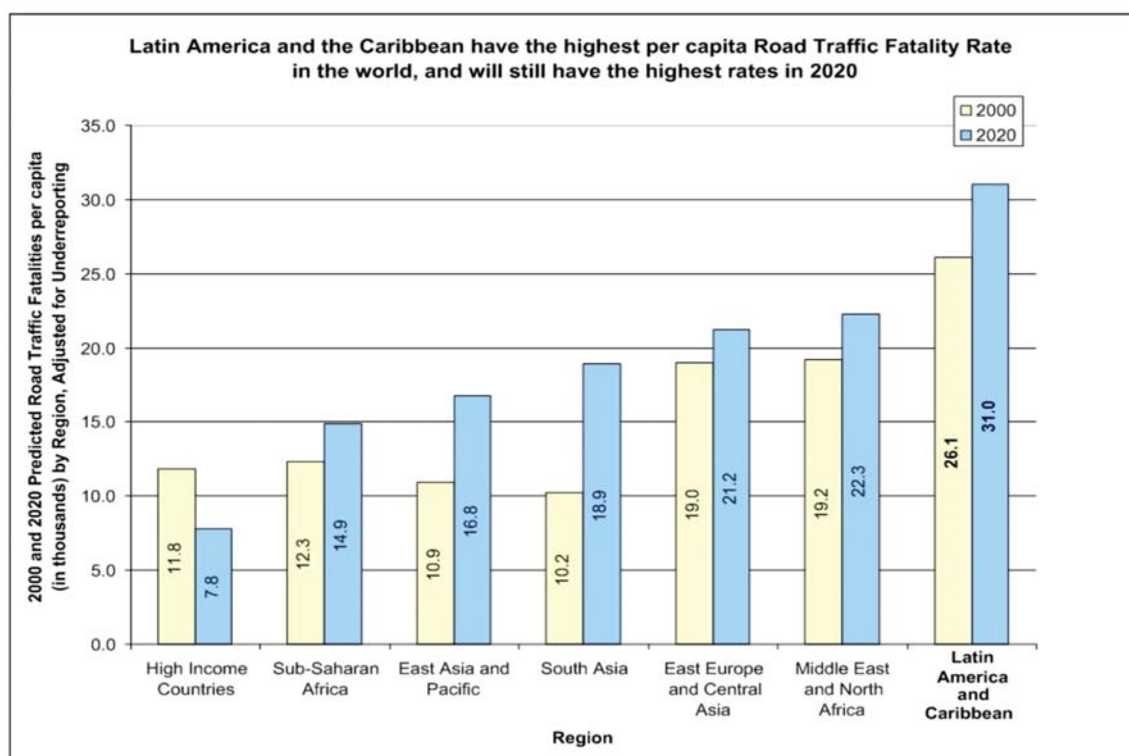
Julio Urzua, Secretariat[1]

Road traffic injuries constitute a major but neglected public health problem that claims 1.2 million victims a year, equivalent to the disease burden of tuberculosis or malaria, with considerable social and economic costs of up to 1.5% of GDP, or more than (US) $20 billion for the region. The tremendous burden of death and disability resulting from road traffic crashes falls primarily on low- and middle-income countries.[2]

In 2000, Latin America and the Caribbean Region (LAC) had the highest average deaths per capita in the world (26 deaths/100,000 people) and the highest projected rate for the year 2020 (31 deaths/100,000 people), in the absence of any further action.[1] This suggests that by 2020 the projected deaths per capita in LAC could be up to 6 times higher than the current rate in the countries with the best rates in the world (UK, Sweden, and The Netherlands).

[1] This paper is taken mostly from the Regional Committee Charter which was a collaborative effort of the members of the Transitional Commission: Arturo Cervantes, Alberto Concha-Eastman, Bella Dinh-Zarr, Francisco Fernandez, Hilda Gomez, Lisa Hayes, Lucien Jones, Carlos Macaya, Pietro Masci, Emilio Onate, Eugenia Rodrigues, Nani Rodriguez, Roy Rojas, Mark Rosenberg, Ricardo Sanchez, Marc Shotten, Greg Speier, Ernesto Tenenbaum, Julio Urzua, and David Ward.

[2] *World Report on Road Traffic Injury Prevention, World Bank and World Health Organization,* 2004



Source: *World Report on Road Traffic Injury Prevention*, 2004.

A proper response will require a coordinated and multi-sectoral approach, from all relevant parts of government (including transportation, health, law enforcement, education, finance, and urban planning), civil society (including advocacy organizations, academia, foundations, automobile clubs, and professional organizations), and the private sector (including road builders and road maintenance organizations, automobile manufacturers, motor vehicle product manufacturers, insurance companies, oil companies, and commercial road users, among others). To be effective, any interventions must also mobilize all the relevant sectors to cover all three phases of road traffic injury control: prevention of crashes and injuries; provision of prompt and high-quality acute care to those injured in traffic crashes; and to minimize future disabilities through the provision of rehabilitation and long-term care to the injured.

The Regional Committee will work to help adapt the "Safe System" strategy that is increasingly being recognised in other countries as necessary to further improve safety outcomes. These approaches have a number of distinctive characteristics.

They[3]:

- recognize that prevention efforts notwithstanding, road users will remain fallible and crashes will occur.
- stress that those involved in the design of the system need to accept responsibility for ensuring that no deaths or serious injuries occur as a result of using the road transport system, and those that use the system need to accept responsibility for complying with the rules and constraints of the system.
- align safety management decisions with broader transport and planning decisions that meet wider economic goals and human and environmental health goals.
- shape interventions to meet the long term goal, rather than relying on "traditional" interventions to set the limits of any long term targets.

President Oscar Arias of Costa Rica is the Honorary Chairman of the Transitional Commission for Road Safety in Latin America and the Caribbean (TC). The task of the TC was to design a plan for the RC. The impetus for this Commission came from the participants at the planning meeting carried out in Santiago, Chile in January, 2006 and the First Latin American and Caribbean Road Safety Stakeholders Forum, held in San José, Costa Rica on September 12-14, 2006. Additional input and work on the charter came from the participants at the Second Latin American and Caribbean Road Safety Stakeholders Forum, held in Rio Grande, Puerto Rico on December 5-6, 2007.

In their rationale for initiating this collaborative effort, the stakeholders argued that it is both important and urgent that all the nations of the Latin American and Caribbean Region work together to stop the growing epidemic of deaths and injuries on our roads. But in this region there was no mechanism to promote multi-sectoral collaboration and to manage road traffic safety programs. Therefore, they proposed to work together to develop a regional coordinating mechanism that would draw upon all relevant sectors of government, civil society, and the private sector to promote a region-wide approach to road safety. They committed by consensus to establish this entity to promote regional road safety collaboration for reducing the toll of road traffic injuries in the region.

There is a distinct value proposition for the Regional Committee. The Regional Committee provides value to national governments and organizations involved with road safety by promoting information exchange among countries and facilitating informational visits among countries; it helps to generate collaborative action across national boundaries and facilitates the development of project plans and the measurement of results; it can reinforce and strengthen a country's commitment to road safety; it can help to build country capacity to formulate and obtain loans for major road safety projects; it helps mobilize and organize demand for effective road safety products and creates the potential to harmonize requirements for road signs and road technology; it brings together multisectoral approaches and expert panels; and it reinforces and provides external support for individual stakeholders within specific countries.

[3] OECD, Transport Research Centre. Towards Zero: Ambitious Road Safety Targets and the Safe System Approach - ISBN 978-92821-0195-7 OECD/ITF, 2008.

The participating organizations committed to work together during 2007 to develop a regional committee that would:

- Be representative of all relevant sectors of government, civil society, and the private sector,
- Promote a region-wide approach to road safety,
- Strengthen the capacity to collect and use road safety information throughout the region,
- Promote harmonization of laws for road and vehicle safety, and
- Share road safety information and best practices across the region.

The heads of the following sponsoring organizations agreed to serve as “patrons” of the Transitional Commission: the Director of PAHO; President of the Inter-American Development Bank; Manager of the Transport, Water, and Infrastructure Department of the World Bank; Chairman of the Board of the FIA Foundation; and the Executive Secretary of the Economic Commission for Latin America and the Caribbean (ECLAC). Additional members from Latin American and the Caribbean Countries have joined the Transitional Commission.

Additionally, the Secretariat has worked with the Global Road Safety Forum and Transitional Commission members during 2007-8 to design and enable the creation of the Regional Committee. This secretariat consists of two road safety professionals who are funded by the FIA Foundation and supported by the automobile clubs of Latin America and the Caribbean, with further support and office space provided in Santiago, Chile by the Automobile Club of Chile. The decision was made to house the secretariat in Santiago so that the Transitional Commission could work in close cooperation with ECLAC.

The Regional Committee aims to help national governments strengthen their capacity for road safety. When requested, the Regional Committee will help to provide the analysis and knowledge sharing that can strengthen political will for road safety and provide national governments assistance with their own road safety strategies, plans and implementation. The Regional Committee will have a coordinating role, serving to link the region-wide approach and the activities of national governments to achieve its goal, vision and mission. The Regional Committee does not intend to reduce casualties by acting alone. Instead, by promoting collaboration both regionally and within countries it hopes to raise the political profile of road safety and help to generate national activities that will save lives and prevent injuries on the road.

The Regional Committee will also try to assist in the process of target setting and monitoring. Setting targets must be part of the political decision-making process and national targets must be owned by the national stakeholders. So while the Regional Committee will not try to set national targets, the Regional Committee will assist with the data analysis necessary to support regional target setting. It will also try to give advice to national governments on how they could produce their own targets to contribute to a regional target.

The goal, vision and mission of the Regional Committee are:

Goal: To reduce the number of people injured and dying on our roads

Vision: Safe Roads for All in Latin America and the Caribbean

Mission: To reduce the toll of road traffic injuries and make road safety a reality for Latin America and the Caribbean by promoting collaboration among the relevant sectors of government, civil society and the private sector and among all countries of the region.

The objectives of the Regional Committee are to:

- Be representative of all relevant sectors of government, civil society, and the private sector
- Promote a region-wide approach to road safety that also engages with regional and international organizations which share our mission in whole or in part
- Strengthen the capacity to collect and use road safety information throughout the region,
- Promote harmonization of laws for road and vehicle safety
- Share road safety information and best practices across the region

Working to develop a multi-sectoral regional effort has been challenging, but worth the effort considering what the members and the region have to gain. Below are some of the lessons we have learned which are important to share with people from other regions:

- This is a very difficult but very important task. It is challenging to try to coordinate and organize different people from different sectors, especially when road safety is not the primary goal of any of these sectors. The different priorities and perspectives add value to the effort as a whole but it is not easy to reach agreement or consensus in the face of so much diversity.
- Road safety does not belong to one sector alone. If a sector does have the lead role in the efforts of a particular country, they must be empowered to coordinate the efforts of all the relevant sectors.
- The process of regional coordination and the work of communicating progress must be inclusive. Everyone must have the opportunity to be heard as well as informed of decisions along the way.
- Dedicated resources-both staff and financial resources-must be made available to support this effort. Not only does the work itself take considerable time and effort, but working across countries with multiple cultures and languages makes it even more difficult and time-consuming and increases the time and money required.
- We need to be clear on the purpose and goal of the effort, and the goal needs to be shared by all its members. Keeping our goal in front of us helps to mobilize and sustain the support and effort needed for our work.
- The coalition must have a clear strategy, efficient management, well-defined membership and defined roles for those members, and a way to measure its progress.

Kavi Bhalla
Research Scientist
Harvard University Initiative for Global Health

Dr.Kavi Bhalla is†a Research Scientist at the Harvard University Initiative for Global Health, where he direct a project funded by the World Bank Global Road Safety Facility to generate best estimates of deaths and injuries from road traffic crashes in developing countries. Kavi is also the leader of the road traffic injury expert group of the Global Burden of Disease project, a large collaborative study that aims to perform a comprehensive assessment of the burden of over 150 diseases, injuries and risk factors in the world. He has a PhD in Theoretical and Applied Mechanics from Cornell University (2001) and prior to moving to his current position at Harvard, he led the pedestrian safety research program at the University of Virginia Center for Applied Biomechanics.

Saul Billingsley
Deputy Director General
FIA Foundation for the Automobile and Society

Saul Billingsley is Deputy Director General of the FIA Foundation for the Automobile & Society. The FIA Foundation is an independent international charitable organisation, based in the United Kingdom, which is a leader in global road safety advocacy and supports research and campaigns worldwide on road safety, environmental and sustainable mobility issues.

Saul is also Campaign Coordinator of Make Roads Safe, the Campaign for Global Road Safety, which proposed and helped to secure the first Global Ministerial Conference on road safety, to be held in Moscow in November 2009. The campaign is currently leading the ‘Call for a Decade of Action for Road Safety 2010-2020’.

Saul serves on the Executive Committee of the Global Road Safety Partnership (GRSP) and on the Board of Trustees of the Road Safety Foundation, a UK road safety charity.

Prior to joining the FIA Foundation, Saul managed European transport policy issues for the Federation Internationale de l’Automobile (FIA), at its European Union bureau in Brussels. He was Parliamentary & Campaigns Manager for the RAC, a UK motoring organisation; a campaigns assistant to Gordon Brown MP, the then UK Shadow Chancellor; and was a national constituency coordinator for the Labour leadership campaign of Tony Blair MP in 1994.

He is a graduate of the University of Newcastle upon Tyne and holds a post-graduate diploma from the Centre for Journalism Studies, University of Wales, Cardiff.

Tony Bliss
Lead Road Safety Specialist
Transport Division of the Energy,
Transport and Water Department
The World Bank

Tony Bliss is the Lead Road Safety Specialist in the Transport Division of the Energy, Transport and Water Department of the World Bank. The focus of his work is on the development and promotion of multi-sectoral strategies to improve road safety outcomes in low and middle income countries, working in partnership with Bank sector teams and global, regional and country partners. Tony is responsible for related World Bank road safety initiatives and partnerships and is assisting the preparation and implementation of road safety projects in countries throughout the Bank's regions. He is also leading the establishment of the World Bank Global Road Safety Facility which is funding global, regional and country capacity building initiatives.

Tony commenced his career as a transport economist with the Ministry of Transport, New Zealand and then moved to Australia to join the National Highways Planning Team at the Commonwealth Bureau of Roads. He later took up a position with the National Telecommunications Planning Branch of Telecom Australia to undertake policy research on the convergence of telecommunications, computers and transport systems. He then established his own consultancy practice in this field and for several years was an adviser to the Ministry of Finance and National Economy in the State of Bahrain. In 1994 he returned to New Zealand to join the newly established Land Transport Safety Authority as General Manager of the Strategy Division, where he was responsible for the preparation and delivery of the National Road Safety Plan, the New Zealand Road Safety Program and the new national Road Safety Strategy 2010. In 2002 he took up his position with the World Bank.

Hoong Chor CHIN
Director
(Degree Education), Logistics Institute-Asia Pacific
National University of Singapore

Dr. Chin received his BEng and MEng in Civil Engineering from the National University of Singapore and his PhD in Transportation from University of Southampton. He was a Loke Foundation Scholar as well as Visiting Scholar at Kyoto University as well as University of California, Berkeley. He has held appointments as Assistant Dean in the Faculty of Engineering and Deputy Head in Civil Engineering at the National University of Singapore.

Prof Chin teaches Traffic Engineering and Transportation Planning in the Department of Civil Engineering as well as in the University Scholars Program. He has applied innovative methods of teaching in his modules and was awarded the Innovative Teaching Award (Gold) in 2002. He has also conducted external courses on Transportation Impact Assessment, Road Safety Audits and Transportation Planning for engineers in Public Works Department, Land Transport Authority, the Housing & Development Board, the Institution of Engineers (Singapore) as well as the Ministry of Foreign Affairs.

Prof Chin's research interests include Transportation Planning and Modeling as well as Transportation Safety. He has written numerous journal and conference papers on Transportation Engineering and Traffic Safety, including chapters in books on Transportation Planning in Singapore. In 2003, he received the UK Institution of Civil Engineers Webb Prize on Transportation for his innovative work on Benchmarking Road Safety Projects.

As a Professional Engineer, Prof Chin is actively involved in consultancies to evaluate transportation schemes and improve transportation operations and safety both in Singapore as well as the region. He has undertaken consultancy projects, including mega projects for Government authorities and agencies such as the Land Transport Authority, the Maritime & Port Authority, the Housing & Development Board, Port of Singapore Authority, Jurong Town Corporation, Singapore Traffic Police and Immigration and Checkpoints Authority. He has also served as a transportation consultant in a number of multi-national companies, such as Exxon Mobil and Hewlett Packard as well as many developers and contractors, including Keppel Land and CapitaLand. An Accredited road safety auditor, he has reviewed numerous road and expressway schemes in Singapore. He was consultant to the Asian Development Bank to evaluate the road safety standards in Singapore as well as to assess transportation planning projects in the region.

Prof Chin is a Fellow and the Vice Chairman of the Chartered Institute of Logistics and Transport and is a member of the Ministry of Defence (MINDEF) Board on Requisition of Civilian Resources (Vehicles). He is also the Deputy President of the National Safety Council in Singapore and a member of the Advisory Committee on Certification of PSB Tud Suv Singapore. He has also served on several Government advisory committees on transportation-related issues, such as vehicle quota system and public transport fares as well as on technical committees on road safety issues in SPRING Singapore.

Armin Fidler MD, MPH, MSc.
Lead Health Policy Adviser, Human Development Network, The World Bank
Adjunct Faculty, The George Washington University, School of Public Health

An Austrian national, Dr. Armin. Fidler joined the World Bank in 1993 and started to work in the Latin America and Caribbean (LAC) Region. In 1997 he transferred to the Europe and Central Asia Region (ECA) and was promoted to become the **Manager for Health, Nutrition, Population.** In this function he represented the ECA Region on the Bank's global Sector Board for Health, Nutrition and Population. He was responsible for the Bank's health strategy, lending and technical assistance programs, including all analytical and advisory work in 30 client countries raging from the European Union to the countries of the former Soviet Union. He oversaw a team of about 30 staff and consultants working on health policy and manages jointly with the department's management team over 100 staff for human development located at the Bank's headquarters in Washington DC and in offices in client countries in the ECA Region. Since the beginning of 2008 Dr. Fidler was appointed the **Lead Health Advisor for Policy and Strategy** for the World Bank at the global level, responsible for global strategy, knowledge management, strategic staffing and global partnerships.

Dr. Fidler is a licensed Family Physician, holding a Doctor of Medicine Degree (MD) from the **University of Innsbruck, Austria,** a Diploma in Tropical Medicine and Hygiene (DTM&H) from the **Bernhard Nocht Institute** at the University of Hamburg, and Master of Public Health (MPH) and Master of Science (MSc.) degrees in Health Policy and Management, both from **Harvard University's School of Public Health.** He also holds certificates in Management from the **Harvard Business School** and in Public Finance and Welfare Economics from the **London School of Economics and Political Science.**

Dr. Fidler has an Adjunct Faculty appointment at the **George Washington University School of Public Health** in Washington DC, and at the **Management Center Innsbruck (MCI)** Austria, and serves on the Boards of Non-Governmental Organizations such as the **Open Health Institute (OHI)** in Moscow and on the Steering Committee of the **European Observatory on Health Systems and Policy,** the **GAVI Alliance** and **the German School Washington DC.** His academic record includes publications in peer-reviewed journals, conference contributions and keynote addresses focusing on health policy, health insurance and finance, health sector reform and public health, including HIV-AIDS. He is a regular reviewer and contributor for peer reviewed international literature and serves on the editorial

board of professional journals such as “Globalization and Health” and “EuroHealth”, published by the London School of Economics.

Prior to joining the World Bank, Dr. Fidler served as Sub-Regional Advisor for the **World Health Organization,** based in Mexico and Central America after serving in the Epidemic Intelligence Service (EIS) at the **US Centers for Disease Control and Prevention (CDC)** in Atlanta, GA. While obtaining graduate degrees at Harvard University he was an Associate Researcher and Program Manager for the **Wellness Councils of Greater Boston** and served as a Member of the Faculty Committee on Educational Policy at **Harvard University’s School of Public Health.**

Hiroshi Ishizuki
Executive Director
International Association
of Traffic and Safety Sciences

As Executive Director, Hiroshi ISHIZUKI leads IATSS since 2001, which is founded 17 September 1974 as a Charitable Organization.

The Association Goals is as follows.

"Approaching traffic and safety issues from the perspective of the organic relationship between people, machines and the environment, the Association seeks to contribute to the realization of a more ideal traffic society by promoting investigative research that is interdisciplinary and international and by providing awards in support of investigative research, educational and other activities related to traffic and safety issues."

Other Present posts:

2000- Executive Director, The Association for the Study of Security Science
2003- President, Japanese Association for Public Safety (unofficial translation)
2007- Board member, Japanese Society of Safety Promotion
2008- Special Advisor, Atsugi city Safety Community project

Career:

1969 Graduated Hitotsubashi University
1969-2001 National Police Agency
Major appointment(s) at following agencies and offices
Prefectural Police Headquarters in Ishikawa, Fukuoka, and Hyogo
Secretary, Embassy of Japan in Korea
Private Secretary to the Chief Cabinet Secretary
(to Mr. Gotohda and the late Mr. Obuchi)
Director of Investigation Division II, National Police Agency
Director of Organized Crime Control Division I,
National Police Agency
Director General, Nagasaki Prefectural Police Headquarters
2001- Executive Director, International Association of Traffic and
Safety Sciences

Publications:

“Structure and establishment of security” 1996 The Journal of Police Science
“Experimental study of the establishment of community safety”
Special Research Report of The Association for the Study of Security Science
“Japan’s Police” 1999 cowrite with Atsuyuki SASSA
“Preventive Approach to Civil Life Casualties”
“Making Safety Infrastructure toward a Crime-Resistant Society”
2006 Security Science Review
“Strategic Approach toward Safety Community” 2006 edited by Yoriaki NARITA

Lectures:

Intensive School for Traffic Safety Coacher (Cabinet Office)
Academy for Public Safety (Kasugai Municipal Office, Aichi Prefecture)
Kashiwa AN AN Academy (Kashiwa Municipal Office, Chiba Prefecture)
Primer of Public Safety Sciences (Waseda University Graduate School)

Commentary Broadcasting:

Traffic Safety Promotion programs (National Government of Japan)

Roger Johansson
Chief Strategist
Road Safety Division
Swedish Road Administration

Mr. Johansson holds a position as Chief Strategist att the Road Safety Division, Swedish Road Administration. Mr Johansson has been active in the development of Vision Zero which is the basis for road safety policy in Sweden and has influenced policies in many other countries. He has earlier held positions as Deputy Director and Acting Director for Traffic Safety at SRA. He is a member of the UN Road Safety Collaboration (UNRSC), the Executive Board of World Bank Global Road Safety Facility (WBGRSF) and the Executive Board of the Global Road Safety Partnership (GRSP). Having a background in research with positions as Senior Researcher at the Swedish Road & Transport Research Institute (VTI) and earlier at the Universities at Uppsala and Umeå, Mr Johansson has written many papers and made numerous presentations on, primarily, Traffic Safety Management and -Strategies.

Professor Dr. Ahmad Farhan Mohd Sadullah
Director General
Malaysian Institute of Road Safety Research

Professor Farhan has nearly 20 years working experience in transport and traffic engineering and also traffic safety in Malaysia and also internationally. He is currently the Director General of the Malaysian Institute of Road Safety Research (MIROS).

Professor Farhan is a member of the Institute of Transportation Engineers (ITE), the Road Engineering Association of Asia and Australasia (REAAA) and the Road Engineering Association of Malaysia (REAM). He was a Deputy Chairman for the ITS Technical Committee and a member of the Highway Planning Technical Committee for REAM. Prof Farhan is also a graduate member of the Institution of Engineers Malaysia (IEM), the American Society of Civil Engineers (ASCE), the Transportation Science Society of Malaysia (TSSM) and the East Asia Society for Transportation Science (EASTS). For IEM, he was involved in the Highway and Transportation Engineering Technical Committee for a couple of years. He has consecutively held the vice presidency and the deputy presidency of TSSM. In Malaysia, he is actively involved with the Committee on Strategic Plan for Intelligent Transport System (ITS) and also the Technical Committee for System Architecture for ITS.

Prof Farhan has received international recognitions including the International Co-Operative Research Activity (ICRA) EASTS Research Award, the First Prize in the Young Engineers Prize Competition, from the Washington Society of Engineers and the USAINS Holding Industrious Award for Consultancy Work three years in a row. He has also won an ITEX Gold Medal. He has been involved in numerous international and national research grants and made a multitude amount of contribution to published research works.

Mark L.Rosenberg
Executive Director
The Task Force for Child Survival and Development

Mark L. Rosenberg has worked in government, academia, and the private nonprofit sector. Dr. Rosenberg currently serves as Executive Director of the Task Force for Child Survival and Development. Before assuming his current position, Dr. Rosenberg served 20 years with the Centers for Disease Control and Prevention (CDC), including early work in smallpox eradication, enteric diseases, and HIV/AIDS. He was instrumental in establishing CDC's National Center for Injury Prevention and Control (NCIPC) and became the first permanent director in 1994, serving as director and Assistant Surgeon General until 1999.

The Task Force for Child Survival and Development is a not-for-profit organization that helps save and improve the lives of millions of people around the world each year by addressing specific health-related issues, from infectious diseases to injury prevention to child development. Its work focuses on the most vulnerable populations, with particular attention paid to children, whether in Atlanta, Georgia, or communities in Africa, Asia, and the Americas. It does this by partnering with leading experts in various fields - including well-known organizations like the World Health Organization, CDC, and major foundations - who come together to improve the way we use health information and solve problems in a collaborative way. Last year the Task Force coordinated the distribution of more than 150 million doses of medicine to treat Neglected Tropical Diseases such as river blindness, elephantiasis, and intestinal worms in children.

The Task Force also served as the secretariat for a coalition working to promote global road traffic safety in developing nations-including The FIA Foundation for the Automobile and Society, UNICEF, UNDP, The UN Department of Economic and Social Affairs, The World Health Organization, and The World Bank-a coalition which organized two UN General Assembly sessions and passed a resolution calling for the first-ever global ministerial conference on the global road traffic injury epidemic. Dr. Rosenberg has done research and consulted widely-with WHO, UNICEF, and the World Bank-on effective collaboration in global health and is the lead author *of Real Collaboration: What Global Health Needs to Succeed,* a book that will be published by the University of California Press in 2009. He has worked with President Oscar Arias of Costa Rica to organize a coalition to address road traffic injuries throughout Latin America and the Caribbean. Dr. Rosenberg is a member of the high-level Commission for Global Road Safety and of the Institute of Medicine, where he served 7

years on the Board on Global Health. He is also co-editor-in-chief of the International Journal of Injury Control and Safety Promotion.

Dr. Rosenberg has broad experience in medicine and public health, ranging from infectious diseases, to injuries, and mental health. He is board certified in both psychiatry and internal medicine with training in public policy. He was educated at Harvard University where he received his undergraduate degree as well as degrees in public policy and medicine. He completed a residency in internal medicine and a fellowship in infectious diseases at Massachusetts General Hospital, a residency in psychiatry at the Boston Beth Israel Hospital, and a residency in preventive medicine at the CDC.

Julio Urzua

Secretariat
Transitional Commission for Road Safety
in Latin America and the Caribbean

Mr. Julio Urzua is the Executive Secretary of the Transitional Commission for Road Safety in Latin America and the Caribbean which works to reduce the toll of road traffic injuries in Latin America and the Caribbean. The Commission works by promoting collaboration among relevant sectors of government, civil society and the private sector among all countries of the region. Mr. Urzua helped to organize the First and Second Latin American and Caribbean Stakeholders Forums and is currently on the planning committee for the First High-level Ibero-American Road Safety Forum for Latin America and the Caribbean which will be held in Madrid, Spain on February 22-24, 2009 He also currently works in the government of Chile as the Chief of Cabinet for the Minister of National Properties. Prior to his current position, Mr. Urzua served as Chief of Cabinet for the Minister of Transport and then as Executive Secretary of the National Commission for Road Safety (CONASET). During his time at CONASET, important legislation and norms were passed including banning the use of cell phones while driving, increased penalties for drinking and driving, mandatory use of child seats, and mandatory usage of seat belts in the rear seats. CONASET ran several national road safety campaigns and documented a 7 per cent reduction in road fatalities, during a time when Chileans built more roads, drove more vehicles and had more people using the roadways. For this achievement CONASET was awarded the Prince Michael International Road Safety Award. Mr. Urzua studied Public Administration at Universidad de Santiago de Chile and received his Master of International Public Affairs at the University of Wisconsin-Madison.

Parallel Session 2

Agricultural Policies and Climate Change: Challenge and Opportunity for Future Diets and Public Health

CASE STUDIES IN FISHERIES SELF-GOVERNANCE

Simon J. Funge-Smith
Senior Fishery Officer, FAO Regional Office for Asia and the Pacific

Latest FAO estimates indicate that small-scale fisheries contribute over half of the world's marine and inland fish catch, nearly all of which is used for direct human consumption. They employ over 90% of the world's about 28 million capture fishers and support another approximate 84 million people employed in jobs associated with fish processing, distribution and marketing and we still believe these figures are under-estimates. At least half of the people employed in small-scale fisheries are women.

In spite of their economic, social and nutritional benefits and societal and cultural values small-scale fishing communities often face precarious and vulnerable living and working conditions. There are various factors contributing to these conditions including insecure rights to land and fishery resources, inadequate or absent health and educational services and social safety nets, vulnerability to natural disasters and climate change and exclusion from wider development processes due to weak organizational structures and representation and participation in decision-making.

Small-scale producers, processors and marketers face various constraints in realizing benefits from globalization including expanding trade in fish and fishery products. These included inadequate access to markets, financial services, know-how and capacity to meet increasingly demanding sanitary requirements. This situation is aggravated by fishery resource decline, coastal habitats loss, and by user conflicts both within and outside the fishery sector.

The role of fisheries in diets

Fish are a major source of protein, fat, and micronutrients for a large part of the world's population, particularly the poor.

In traditional societies, nutrient intake may have been adequate based on seasonal diverse diets and cuisine based around foraged crops or caught fish and other aquatic animals. Modernizing agriculture policies to increase production[JK1] can result in changing diets, however these may not necessarily be nutritional beneficial. There are examples where loss of dietary diversity and hence negative dietary change result from focusing on cash crop/commodity production or production for export. In many cases decreased access to and availability of wild aquatic resources cannot be buffered through domestic production or market foods (for positive dietary change) as rural poor often lack formal education and nutrition education for making right alternative food choices.

Whilst we often think of fish from the sea as an important source of fish for the global seafood trade, we must not ignore the massive contribution of inland fisheries. Inland fisheries in rivers, lakes, and wetlands are important sources of fish protein because almost the entire catch gets consumed directly by people-there is practically no by-catch or "trash" fish in inland fisheries (FAO, 1999). The population of Cambodia, for example, obtains roughly 60 percent of its total animal protein from the fishery resources of the Tonle Sap alone (MRC, 1997). In the Mekong River Basin, fish consumption ranges between 24-34 kg/person/year and is a significant contributor to dietary quality in rural areas (Hortle, 2007). The production of fish and other aquatic animals[1] from rice fields is unbelievably high and often overlooked (Halwart). The dispersed nature of inland fisheries often means that this valuable contribution to diets goes unremarked or undervalued. This is particularly important in developing countries with high levels of chronic malnutrition and micronutrient deficiencies (in particular of Vitamin A, iron) and areas where access to marine fisheries products is not possible or the costs are prohibitive for the diets of the poor.

As much as 60% of the human brain is made up of lipids and the, the combination required for the brain are always the same, particularly for the Omega 3 fatty acids. Although these lipids are abundant in seafood they are difficult to get from the high protein/carbohydrate diets available to land based animals. Human diets that are rich in fish and other aquatic animal products guarantee good access to these vital lipids. As long as humans remained close to the sea and had a relatively high proportion of seafood in their diet, their brains (and especially the developing brains of their children both in the womb and in early life) remained well fed with the fatty acids they needed for proper development and function. Over the last 50 years both the amount of fat within the human diet and, more important, the type of fat that humans eat has changed dramatically. Food policies lie behind much of this, alongside changing dietary habits and urbanization as well as environmental degradation and it is considered that addressing non-communicable diseases (e.g. diet related) will become more important than communicable diseases in Asia in the next 20 years (Popkin et al., 2001) Promotion of fish in the diet, or ensuring that policies do not deter or diminish current levels of fish consumption could contribute to assuring the continued valuable contribution of fish to the mothers and their children (Elvevoll & James,2000)

We often hear of the rich source of omega 3 lipids from seafood, but this belies a broader function of fish and aquatic animals in general. In a rural study of a province in Cambodia, fish and OAA supplied 46%, 10%, 31% and 135% of the recommended intake of protein, vitamin A, iron and calcium, respectively. Of these amounts, big fish supplied most protein while small fish supplied the majority of vitamin A, iron and calcium. Calcium bioavailability was most likely high as calcium mainly originated from the bones of small fish which have a high bioavailability (Toft Mogensen, 2001).

The term "fish" is often used generically to mean all aquatic animals. Up to 30% or more of the production of rice field animals are in the form of insects, molluscs and crustaceans. The vast diversity of aquatic life that is harvested from rice fields in China, VietNam, Thailand, Cambodia and Lao PDR highlights the dietary diversity of nutrition provide by these environments (Meusch et al.; 2002, Balzer et al., 2006; Friend et al., 2007).

So we are what we eat, and our diets can have a strong influence on our general well being and the extent to which we reach our full potential. Let us look at some of the issue which influence the way that we can access fish and aquatic animals, and how this may have knock on effects to diets and health.

Threats to fisheries and the related policy drivers

Intensification of marine capture fisheries

In coastal areas, the principle threat to fisheries is the degradation of shallow waters and their associated ecosystems. This occurs through a variety of processes including over-exploitation by small-scale artisanal fisheries, destruction of habitats, marine pollution and environmental degradations resulting from land transformations, agriculture and urban/industrial pollution, and intensive fishing pressure from more heavily mechanized/industrialized fishing vessels. Coastal fisheries and fishing capacity is often poorly regulated. The policies for introduction of intensive fishing method and mechanization through the 1970's has seen higher increases in fishing effort and consequent decline in fisheries resources. Policies that have driven this include subsidies to expand fishing effort, competition amongst fisheries to increase catch as the catch value and quality declines.

As a result coastal livelihoods have declined, often in the small-scale part of the sector and this has triggered a range of health related issues amongst other impacts. Migration and poverty which frequently coexist with small-scale fisheries, have seen drug use and sexually transmitted disease increase greatly amongst fishing communities, which are increasingly recognized as hotspots for HIV and drug use. Declining incomes and loss of access to previously widely available low cost fish results in changing dietary habits and quality.

Fish is increasingly used for animal feeds

The promotion of aquaculture as an opportunity to increase foreign revenue by production of export targeted products has also placed pressures both on land and water resources as well as the demand for fish which may otherwise have been used directly for domestic fish consumption. Besides being used as food, fish is also increasingly used as feed with nearly one-third of the world's wild-caught fish being

"reduced" to fishmeal and fish oil. These are used in feeds for livestock such as poultry and pigs and in feeds for aquaculture (Funge-Smith et al., 2005).

Environmental degradation and changing water regime in inland fisheries

The principal factor threatening inland capture fisheries is the loss of fish habitat and environmental degradation. Most of the world's freshwater systems have been modified to a certain degree. Rivers have been physically altered by dams and reservoirs, or channelled and constrained to prevent and control floods, with the consequent loss of riparian habitat. Wetlands, some of the most productive ecosystems in terms of fish production, have been and continue to be drained throughout most of the world. In such areas as the Mekong River basin and other parts of Asia, overfishing and destructive fishing practices also contribute to the decline in inland fisheries production (FAO, 1999).

The recent fuel crisis has thrown the demand for hydropower back into sharp relief. For the past decade the impact of hydropower development has been increasingly highlighted from the perspective of environmental impact and the effect on those households dependent upon river and floodplain fisheries. Increased understanding of the value of these fisheries and their contribution to economies has resulted in a degree of skepticism about the real costs of hydroelectricity and the distribution of its benefits. Unfortunately fuel price rises have now reset the balance of values and again we see a strong trend in developing hydroelectricity with its inevitable cumulative impacts on the populations dependency upon these freshwater fisheries for both food and income. This was recently highlighted in a debate around the Mekong river basin and it was concluded that there should be a strong policy of assuring no disruption of fisheries in a considerable part of the river to assure the livelihoods of the dependent populations, especially with communities which are already suffering from high levels of chronic malnutrition (stunting)

An additional point here with perhaps more localized impact is the effect of mining development involving contamination of aquatic ecosystems with heavy metals (e.g. mercury), elsewhere agricultural runoff can contribute high levels of pesticides, herbicides. Government policy can have a strong effect on the extent to which these issues have serious impacts or not.

Perverse subsidies and promotions

Hidden subsidies or government promotion policies often lie behind these efforts and whilst the intention is good, that of increasing wealth, income, employment; the impact of small scale fisheries and fisheries resource users is often one of marginalization and declining value of the livelihood. This in turn, has knock-on effects at the household level, including diet and health - but also at the national level (e.g. associated loss of GDP through malnutrition through reduce labour, hampered education, etc)

Moving to self governance

There is much talk of tragedy of the commons, whereby the destruction and degradation of a natural resource base under open access is more or less assured by the unregulated rush for the resource and competition between users. This leads to

an assumption that commons cannot be managed and that a limited number of resources exploiters who are well managed is a preferable situation. This sometimes to leads to policies that are equally tragic, being the capture of the resource for the benefit of the few and exclusion of those previously dependent.

The solution lies somewhere in between where equitable access is assured so that the many can benefit from the natural resource base, but within a framework that allows for limitation of entry and effort and the sustained use of the resource. Thus access is limited, but equity of access by a larger number of resources users is assured, preventing exclusive capture by the influential or wealthy.

This approach works well in systems which are geographically small and coherent and is often the existing basis for management in areas where the role of government is rather limited or weak. Traditional systems of management are often based on such principles, so that although there may appear to be open access, in fact there are wide ranging traditions, customs norm and agreements between resources users and neighbouring communities over the access to and use of a fishery resource.

Modernization pressures do affect these relationships and often lead to the breakdown of these systems in the face of economic development and increasing competition. The tendency over the past 100 years to assume that the state has ownership over natural resources and these can be managed by centralized national agencies has not recognized these existing arrangement, tended to undermine them.

Facing modernization requires new ways of dealing with legal issues and the role of the state, where previously this may have been of marginal importance or even irrelevant. More recently, the re-discovery of local management or self governance for natural resources has occurred with the acceptance of the clear failure of centralized management and the almost widespread decline in the quality of capture fisheries throughout the region. This has been reinforced by the success of more local management efforts often based around pre-existing or traditional management systems. Community based /self -governed fisheries have been show to work successfully and are often built on pre -existing traditional rights frameworks.

The clear message from successful examples of this is that communities who are capable of organizing themselves for the purpose of management of their natural resource base (fisheries) enjoy considerable benefits across their livelihoods. The improved access to fish or income is one of these benefits. More sustainable production and use of the natural resource base is another benefit (FAO, 2005).

Several other features that are less diet related but still linked to health are improved understanding of heath related problems such as drug use and HIV. Strong community based fisheries governance provides an important vehicle for delivering heath messages and allows contact within the fisheries, but also to their wives and children though associated activities. Women are particularly accessible though associated post harvest processing and marketing initiatives which may often be the most successful aspect of the development of community based management.

The issue of rights is perhaps central to the success of self-governance, since this is what allows the setting of rules and the management framework by the resources users and also allows the recognition of its validity by the state as a legitimate form of management (FAO, 2005).

These local self governance structures are however, vulnerable to outside forces. The management or protection of the fisheries resource which forms the basis of

organization can be critically undermined if larger scale commercial type fisheries operations come into an area (illegally) and start to overfish. Equally the conflicts between adjoining fishing groups may lead to the collapse of the structure. In the modern situation, the role of the state is that of arbitrator and the setting of ground rules to resolve disputes and conflicts.

A strong role of the state and positive policy intervention, would be to protect small local management operations from the impacts of larger scale fishing vessels illegal activities, although sadly this is often a neglected duty and one of the great limitations on more widespread development of community based management.

In the inland sector the forces tend to come from outside of the fishery in the areas of land and water use transformations, water management or development of irrigation can change radically the quality of a fishery and also how people access and use the fishery resources. Here again there are example of communities who have organized to self-govern their management of their resources and this has led to general improvement in livelihoods. Better valuation and understanding of the role of fisheries and the associated environments in the health and well being of the resource users would balance out the assumptions that all water development and agricultural transformation policy is unquestionably for the general benefit of all.

Conclusions

In many developing countries, aquatic resources make a fundamental contribution to food and nutrition security and health. As the main animal protein source in protein-poor diets in many areas (particularly more remote areas) within the Asian region, aquatic resources are vital to maintaining people's health and well-being. Aquatic resources tend to be managed as common property, and are of particular importance for poorer people who have less access to land and less capital to invest in improved agricultural staple (e.g. rice) production. While increasing agricultural production is important and necessary, care should be taken to ensure that this does not have negative impact on wild aquatic resources. Equally the potential for improving food security and health through sustainable management of aquatic resources should be explored. At policy level, cumulative impacts from foreign and domestic investment in hydropower, mining, irrigation/water development and agro-based industries should be balanced against potential adverse impacts on nutrition and associated costs. Currently the findings of EIA and SIA do not appear to influence or impact the acceptance/rejection of development proposals in these sub-sectors..

This recognition of the role of fish and aquatic animals in diets is being taken up in increasingly diverse international fora. Good examples are the International Rice Commission[2] and the RAMSAR Convention (RAMSAR, 2008) which have both made resolutions recognizing the importance of these species to ecosystems and human benefit. But the message is slow to translate into active national health, agriculture and development policy.

Considerable opportunities exist in for improving rural livelihoods, family nutrition and health through the management of aquatic resource biodiversity, wetlands, and water resources. However, the full significance of these resources is often overlooked, while gathering data on them is challenging as the harvest of aquatic resources is a highly seasonal and opportunistic activity. A recommendation to you is to encourage your health departments to engage more with fisheries departments to look into where these wild resources are contributing to nutrition and diet, as well as the possible policy threats to this contribution.

It is difficult to demonstrate at this local level direct health and dietary benefits from the self governance activity, but the framework provided by the organization of fisheries and the co-management of fisheries resources offers a greatly improved means to communicate with fisheries groups and to engage on health related issues.

At the higher level, the improved governance of fisheries generally could be seen as a stronger way to ensure that the benefits of fish in the diet are sustained through the better management of fisheries.

"You can take a horse to water but you cannot make it drink"

The role and value of fish and aquatic resources are often hidden amongst other dietary and health factors, human preference and dietary habits are clear example. Bad diets are not always due to lack of good quality food. It is our responsibility to look deeper into what makes balanced rural diets and we should not automatically assume that more food means better food. The impacts of our development or export promotion policies may still impact those who we believe are being benefitted.

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[2] **The 20th Session of the International Rice Commission,** 23-26 July 2002 recommended that: *"Member countries should promote the **sustainable development of aquatic biodiversity in rice-based ecosystems** and policy decisions. Management measures should **enhance** the* **living aquatic resource base. In areas where wild fish are depleted, rice-fish farming should be considered as a means of enhancing food security and securing sustainable rural development. Attention should be given to the nutritional contribution of aquatic organisms in the diet of rural people who produce or depend on rice (FAO, 2002).**

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Sustainable, Organic[1] School Meals in Italy

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Abstract

Thanks to the support of the entire chain of stakeholders (organic farmers, parents, teachers, practitioners, nutritionists, catering companies and municipalities) and to the application of specific public procurement policies, from 1986 to today the number of organic school canteens has constantly increased in Italy. At present 793 organic school canteens deliver around 1 million partly or entirely organic meals each day, representing about 50 per cent of the total school[2] meals delivered in the country. As a consequence of this, local public administrations have become the major buyer of organic products in Italy, contributing significantly to the development of the sector.

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[1] According to IFOAM, the International Federation of Organic Agriculture Movements, "organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved".

A similar definition was delivered by the intergovernmental FAO/WHO Codex Alimentarius Commission, in 1999: "Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system."

[2] It includes nurseries (Age 0-3), kindergarten (3-6), primary schools (6-11) and partially junior high schools (11-14).

The introduction of organic food in school canteens is a complex process, with economic and organizational implications. It requires a serious commitment on the part of national and local authorities with regard both to the related legislative and more broadly legal questions, and to the management of the service itself. The service, in part under direct local authority supervision, in part put out to tender, requires trained personnel at the operational level, and supervisors with specialist expertise and training to oversee the whole catering system. The establishment of clear guidelines, the introduction of appropriate legislation, financing and the allocation of resources, and the development of organizational capacity are therefore all key elements necessary to the successful introduction of organic school meals.

The Italian experience has shown that the introduction of organic food in schools meals generates a wide range of benefits for the community. It promotes a sustainable food system in the countryside, supporting local economies and rural development, and at the same time it promotes healthy eating habits, thereby contributing to good health, it also sustains a traditional food culture and increases consumer awareness of environmental issues.

Reasons for introducing organic food in school canteens

The major reason for the success of the introduction of organic food in school canteens in Italy was the general awareness of the benefits of organic agriculture for the environment, for human health and for rural development. An awareness resulting, not only from the theoretical and scientific validity of organic agriculture but, above all from the experience that organic farmers have accumulated over the last thirty years in many parts of the world.

With regard to the environment, as a large and growing body of research[3] demonstrates, organic agriculture preserves the structure and fertility of the soil, conserves water, mitigates climate change and enhances biodiversity, both wild biodiversity and agro-biodiversity. Moreover, organic agriculture reduces external inputs by controlling pests and diseases naturally, using both traditional and modern methods and stimulating disease resistance. It preserves rural areas from agricultural contaminants such as the inorganic fertilizers, herbicides and insecticides used in conventional agriculture.

As a result of these practices the quality of organically-grown fruits and vegetables is good. Recent studies[4] have shown that, compared to their conventionally-grown counterparts, organic products are lower in water content and have a higher nutrient density, they are richer in iron, magnesium, vitamin C, and antioxidants, with a better balance of essential amino acids. All these characteristics, together with the absence of pesticide residues, make them healthier than conventional food and thus more suited for children's meals.

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[3] FIBL (Research Institute for Organic Agriculture, Switzerland) - Environmental impact: comparison of organic and conventional farming systems (literature reviews) - FIBL dossier "Quality and Safety of Organic Products" - May 2006

[4] FIBL - Putting organic and conventional food to the test (literature reviews) - FIBL dossier "Quality and Safety of Organic Products" - May 2006

Law and regulations relating to school meal provision in Italy

The provision of school meals began in Italy in the post-war period, as a social service and as a response to the nutritional deficiencies of the population in general. In the 1970s the extension of the school day from mornings only to the inclusion of afternoons (*tempo prolungato*) required the extension, on a mass scale, of this provision. The service, however, was often of mediocre quality, with repetitive and badly balanced menus, decisions about which were made at local level.

The improvement began when, in 1987, the National Institute of Nutrition, together with the Ministry of Agriculture and Forestry, set out the first Guidelines for a Healthy Diet. The nutritional model indicated was that of the Mediterranean diet, recognized internationally as one of the most efficacious for the protection of health. Epidemiological studies from the post-war period to today confirm the nutritional values of this diet and its contribution to the maintenance of health. It is balanced, very varied, mostly plant-based, rich in anti-oxidants and low in high-calorie foods and those foods, which favour the development of chronic diseases. Furthermore, the food composition tables and the recommended levels for the intake of nutrients according to age-group and expenditure of energy have proved to be a useful instrument for the compilation of menus in different catering contexts. As regards the use of organic products, however, the determining factor was the approval, in December 1999, of Article 59 of the National Budget for the year 2000. This states: "In order to ensure the promotion of organic agricultural production and quality food products, it is recommended that public institutions operating school and hospital canteens introduce typical and traditional organic products, together with PDO (Protected Designation of Origin) products. The daily provision of food will be undertaken in line with the guidelines and other recommendations of the National Institute of Nutrition".

Although this Budgetary provision constituted a recommendation, not a requirement, to introduce organic produce, it was nonetheless a clear political indication that marked a turning point for many local administrations, encouraging the development of a commitment to transforming school meal programmes.

Another regulation, along similar lines, that was introduced at that time, was the Presidential decree of 7th April 1999, n. 128, concerning the quality of food produced for babies and children. This stated that: "With regard to the composition of all such products, particular attention is required to the freshness, the conservation, and the absence of harmful substances in the ingredients." Article 2, Clause 1 states that these ingredients must not contain residues of any one pesticide above the level of 0,01 mg/kg, neither must they contain genetically modified products".

In conclusion, Italian legislation appears to favour both the Mediterranean diet and the use of organic produce regarding meal provision in public institutions, and at the same time it obliges the distributors of children's food and drink to ensure that the products distributed do not contain chemical residues in line with European legislation for safe upper limits.

At the regional level, the economic backing necessary to the promotion of organic school canteens has been forthcoming in some regions, though the picture is very variable across the country. Whereas by now almost all Regional Administrations have pronounced themselves in favour of improving dietary education, only the Marche, Friuli Venezia Giulia, Basilicata, Tuscany and Lazio actually provide economic

incentives for the consumption of organic products. The motivation for these incentives is, however, almost always primarily that of support of the local economy and agriculture, and only secondarily that of the protection of citizens'health.

The regional laws that pioneered the promotion of organic school canteens are those of the Marche in 1997, and of Friuli Venezia Giulia in the year 2000. Law 15/2000 of the Regional Administration of Friuli Venezia Giulia "The norms for the introduction of typical and traditional organic products in school canteens, and for initiatives in the field of dietary education" authorizes the payment of subsidies to local councils, provided that these councils ensure that at least 40% of the products utilized are produced by companies operating within the Region."

The Regional Law 29/2002 of Emilia Romagna "Norms regarding the reorientation of food consumption and nutrition education, and the requalification of collective catering services" does not provide incentives to individual municipalities to carry out school canteens; however, funds have been allocated to the provincial authorities in support of plans for such a reorientation." This law requires that at least 70% of the ingredients used in the meals distributed in school and university canteens, in hospitals, in Retirement Homes, and public health institutions must be organic. The most significant change concerns the meals distributed in nursery, infant, and primary school canteens: the law states that the ingredients of meals in this sector must be exclusively organic farm products.

The Regional Authority of Lazio has recently approved a law introducing a policy of support for short-term supply mechanisms for organic canteens. This law, on "regional intervention for the promotion of markets reserved for the direct sale of goods from agricultural producers" guarantees subsidies to those municipalities who undertake to utilize products from professional agricultural businesses operating within the direct sales markets.

Developments in organic school catering in Italy

Many local authorities in Italy had already established organic catering services some time before the relevant legislation came into force. The first organic school canteen to be set up was that of Cesena, in the Region of Emilia Romagna, which has been operational since 1986. It was followed by some small municipalities of North Italian regions.

Despite the numerous difficulties encountered by these pioneering munipalities, the results of these experiences were on the whole very positive. It was these experiences which, though numerically limited, provided the stimulus for the proposed law on organic canteens, its subsequent approval, and the extension of its jurisdiction throughout Italy.

From the first survey conducted in 1996, when 24,000 organic meals a day were being served, primarily in nurseries and primary schools, organic catering has grown exponentially to the point where there are now around 1 million meals served each day (table 1).

Table 1: Organic school canteens and organic daily schools meals in Italy, 1996-2006

Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008*
School canteens (n)	69	97	103	110	199	342	522	561	608	647	658	683	791
Meals (nx 000)	24	33	141	146	267	443	654	785	806	839	896	924	983

Source: Bio Bank * provisional data

The models of organic canteens in operation vary from region to region, and also within the regions themselves. Some schools offer a totally organic menu, others only offer particular products. Others again offer an organic menu once a week, or for one week in a month.

The management of the canteens is also diversified. According to a Biobank survey, a majority of municipalities (67%) put the contract out to tender to catering firms, while others (18%) take direct responsibility for the running of the canteens. About 9% have adopted a system of management which is partly public and partly private.

Some examples of organic school canteens

Cesena Municipality

Cesena, a town of about 100,000 inhabitants in a rural area of fruit and vegetable production, can claim pioneer status among organic school canteen programmes with the experiment begun there in 1986. The project was a first line of response to the high levels of cholesterol in local children that were revealed by a pediatric epidemiological study. However, it also served the purpose of developing the organic agricultural sector that was at that time taking root in this richly productive rural area.

The *Pappamondo* Project of the Cesena Town Council was established jointly by the Education Department of the Town Council in collaboration with the Maternal and Child Service of the local USL (Health Department), and was aided and subsidised by the Emilia Romagna Regional Authority. Attention was focused not only on ***what*** the children eat but also on ***how*** they eat. Resources and energy were therefore employed to create a serene and stimulating link between the meal itself and the environment in which it is consumed.

The project demonstrated the feasibility and the functionality of a new method of dining at school, capable of guaranteeing a healthy diet that is both nutritious and appetizing, and at the same time involving families, school operators, technicians and administrators in a stimulating formative experience. Clearly, the project also favoured the expansion of the market in organic produce.

Rome Municipality

The Rome school canteens merit separate consideration both on grounds of the efficiency of the service model in operation, which has already gained recognition as

one of the best examples of administrative practice in Europe, and for the economic value that 150,000 organic meals per day represents. The quantity of fair trade and local organic products required by the municipality are sizeable and are having a significant influence on these markets. The quantity of products required by school canteens on a regular basis has had a calming effect on the organic produce market, thus decreasing price fluctuations of fruit and vegetables and contributing to stable market conditions. The environmental impact involved in mass catering has in part been offset by appropriate measures such as short-haul delivery, differential rubbish collection, the substitution of plastic plates and cutlery with glass, ceramics and biodegradable or recyclable materials, and the use of detergents and disinfectants with a low environmental impact, etc.

The service is continually improving. Among new developments there is the revised criterion of 'guaranteed freshness', the proposal of an overall menu of 150 dishes to educate the children to a maximum variety of foods and flavours, and the promotion of local Roman culinary tradition and that of the Region of Lazio. Raw foods are provided before the cooked meal, and fruit is provided at mid-afternoon. The use of fair trade products is mandatory, and the fees paid by the families are not subject to increase.

There are no vending machines with food and beverages. Children are not allowed to bring food into the school, except for the mid-morning snack. The school meal programme provides a comprehensive approach towards establishing lifelong healthy eating habits and contributing to children's health through: 1) the provision of healthy food in school; 2) education about food and nutrition in the classroom, 3) dissemination of information materials and brochures for parents and children and 4) visits to organic farms.

Campolongo Maggiore Municipality

Campolongo Maggiore is a small town of 10,000 inhabitants in the province of Venice. Since 2001 it has supplied schoolchildren with 100% organic ingredients, an increasing percentage of which are of Italian origin. Improvements in the food are accompanied by improvements in the sustainability of the service as a whole, including the introduction of reusable kitchenware, ecological detergents, and the use of tap rather than bottled water for drinking. The 2006 contract tender provided a good opportunity for the reorganization of the whole service, including the transportation and distribution of food, in order to reach the target for the certification of organic meals set by certified organic caterers. The benefits are self-evident: reduced leftovers since the food is more appealing, reduced non-recyclable waste and the increased separation of organic from other types of waste, since the plates are cleared of food before being placed in the dishwasher. Strategies for recycling waste have been studied and implemented. Food cleared from the plates is given to domestic animals; surplus food that can be used within a few hours (fresh sealed bread, fresh fruit, and yogurt) is kept for an afternoon snack. The rest (unused and sealed) is given back to the caterers. A mid-morning snack, based on fresh bread and fresh fruit, is at present under consideration.

Budoia Municipality

Budoia is a tiny Alpine locality of only 2,200 inhabitants in the Friuli Venezia Giulia Region, noteworthy for its commitment to local development based on

environmental sustainability. The local authority, together with AIAB, has set up a participatory system for the running of the school meals programme that involves both local organic farmers and the parents of the children. The parents choose the products and, together with the producers, set out a production plan that will ensure a supply of fresh local products throughout the school year. This provides the farmers with a guaranteed stable outlet for their products, and ensures a continuous supply of fresh and genuine food for the schoolchildren.

The provision of meals for the nursery school and the primary school amounts to 180 per day. In other words, about 22,000 meals are supplied during the school year. The running of the refectory service has been awarded to a local cooperative, thus contributing to the local economy and local employment.

The parents have recently formed a collective-buying group which purchases fruit and vegetables from local producers, as well as extra virgin olive oil, parmesan, pasta, flour and citrus fruits from Italian producers, giving an added stimulus to these sectors of production.

Cost considerations

The cost of organic meals varies from one municipality to another, and in some cases there is variation even in the same municipality as service provision is very different from town to town. In the case of municipalities that contract the whole service to catering companies, the cost of each meal ranges from 3,80 to 5,30 Euro. Costs vary based on the following factors: whether meals are prepared in school kitchens or by a central catering company that supplies the ready cooked meal, the number of organic products included in the meal, and the inclusion of fruit for mid-morning or mid-afternoon break; etc. The municipalities that take direct responsibility for the running of the canteens buy only the organic foods, in which case the cost per meal, for example at Ferrara, is 1,80 Euro only.

The school meal information service of Emilia Romagna Region calculated the extra cost of organic school meals from about 7 - 10 % considering that organic food products cost 25-30% more than conventional foods, and that the cost of food constitutes about 25 - 33% of entire cost per meal.

Families pay only a part of meal cost, between 40% in Rome to 90% in the richer Northern Italian regions. School lunch is provided free of charge to children from low-income families earning less than Euro 5,000 per year. In some municipalities, such as Rome, the cost is reduced for families earning from 5,000 to 13,000 Euro per year. It is important to consider that in Italy receiving a meal at school is considered a child's right and school lunch is part of the educational programme. Most children eat at school each day, but practically all children eat lunch at school at least once or twice a week.

Conclusion

The success of these organic school meals projects in Italy allows us to draw certain conclusions. In the first place, such projects require appropriate legislation and the drawing up of national guidelines for local authorities that go beyond the simple question of the purchase of organic foods. One aspect that has proved to be important is

that of the modification of existing menus in such a way that full consideration be given to seasonal variation and the availability of locally produced organic products. The presence of costly organic products, however, should be limited.

Another important question is that of the modification of the criteria used for the allocation of contracts, with priority focus on the provision of a high quality cost-efficient service. The experience of the Rome Council, which has introduced the criterion of ùfreshnessû, in favour of local production and of limiting 'food miles', is interesting in this respect. Also encouraging is the adoption on the part of the local authorities, as in the case of Campolongo Maggiore, of the objective of improving the sustainability of the whole service, including transport and the sorting and recycling of surplus produce and waste.

The outcome of each project depends on the involvement, through information and formative practices, of all those who have a role in the process. The parents are informed of the proposed dietary changes through bulletins and meetings, and encouraged to make similar changes at home. The teachers deal with the question of organic farming and as part of the dietary education programme. The local authority staff, responsible for quality control and supervision, receives training that will allow them to immediately recognize any flaw in the service offered by the caterers. And the cooks acquire familiarity with a new range of dishes.

Another interesting possibility, that only a few local authorities, such as those of Cesena and Budoia, have taken up is the setting up of a participatory structure in which all the various actors in the field - local authority, caterers, parents, teachers, dieticians, organic farmers - take collective responsibility for evaluating and if necessary modifying the process.

Finally we can say that organic school canteens in Italy through their daily practice and nutrition education programme promote healthy eating habits in the population, in particular in families with children. Each day children tell their parents what they have eaten at school or what they have learned visiting organic farms. This has a big influence on families and contributes to changing their eating habits.

Also, locally procured organic foods, in addition to being environmentally friendly, can be an important tool for sustaining traditional food culture.

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Case Study - Taking trans fat out of the food supply - the Canadian Experience

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ABSTRACT

It is well known that trans fats (TFA) are undesirable components of the diet because they raise LDL-cholesterol (the "bad" cholesterol) and lower HDL-cholesterol (the "good" cholesterol) levels in the blood, which can lead to increased risk of cardiovascular disease.

Canada has pursued a multidisciplinary approach to decrease TFA levels in Canadian foods. Initiatives undertaken include mandatory nutrition labelling, which included the identification of TFA content of foods, and several initiatives to improve consumer awareness and industry capacity.

To fully address this important public health issue, a multi-stakeholder task force was established in early 2005 to develop concrete recommendations and strategies to effectively eliminate processed TFA in Canadian foods. In June 2006, the Trans Fat Task Force released its report, "*TRANS*forming the Food Supply", with its recommendations to limit the TFA content of vegetable oils and soft, spreadable margarines to 2% of the total fat content; and for all other foods to 5% of the total fat content, including ingredients sold to restaurants.

In June 2007, Health Canada announced that it had adopted the recommendations of the Trans Fat Task Force to limit the amount of TFA in foods. Recognizing the significant progress that had already been made in reducing TFA in the Canadian food supply, industry was given a two-year window to decrease TFA to the recommended levels; otherwise, the department would introduce regulations to enforce the limits. The department is also closely monitoring the efforts of industry to ensure that significant progress is being made to achieve these limits. Full results by product category and

company name are available on the Health Canada website at: http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/index-eng.php

Collectively, these initiatives that have been undertaken in Canada have proven successful as we monitor the continuing progress that is being made to decrease TFA levels in the Canadian food supply.

Introduction

Sources of trans fats

Trans fat or trans fatty acids (TFAs) are formed during the partial hydrogenation of unsaturated fats. Vegetable oils are hydrogenated to increase their melting point so that they are solid or semi-solid at room temperature. The resulting partially hydrogenated oils are used to make processing, baking, and frying shortenings and margarines, all of which are solid at room temperature. Generally, products made with these fats have a longer shelf life than if made with liquid oils, and are more stable and break down less easily under conditions of high temperature heating.

Trans fats are also found naturally at relatively low levels (between 2-5% of the total fat content) in some ruminant-based foods (for example, beef, dairy products, lamb). Lastly, some liquid vegetable oils such as canola and soybean, and fish oils, can also contain small amounts of TFAs, which can be formed during the commercial refinement of these oils. These oils generally contain 0.2-1% TFAs but may contain up to 2.5% TFAs. However, they are also important sources of the essential omega-3 and omega-6 fatty acids.

TFA and health concerns

As with the consumption of saturated fats (SFAs), consuming TFA raises the blood levels of the so-called “bad” cholesterol (serum LDL-cholesterol), which is a known risk factor for heart disease. However, unlike SFAs, TFAs also reduce the blood levels of the so-called çgoodé cholesterol (HDL-cholesterol), which protects against heart disease. In comparison, SFAs raise both LDL-cholesterol and HDL-cholesterol levels. Therefore, dietary TFAs are considered to pose an even greater risk to health than SFAs [1].

With the mounting evidence linking TFAs to heart disease [2, 3, 4,5], the Panel on Macronutrients of the U.S. National Academies' Institute of Medicine, in 2002, recommended that TFA consumption be as low as possible while ensuring a nutritionally adequate diet[1] [1]. Subsequently, in 2003, the World Health Organization advised that TFA intake be limited to less than 1% of overall energy [6].

[1] The Panel members did not set a safe upper limit because the evidence suggested that any rise in TFA intake increases coronary heart disease risk. They also acknowledged that TFAs are unavoidable in ordinary diets.

The Canadian Experience

Situation in Canada during the mid 1990’s

In Canada, scientists raised concerns about the detrimental effects of TFAs and their levels in the Canadian diet as far back as the late 1970’s, focussing first on margarines [7], and then later on the total diet, recommending that current levels not increase [8]. These warnings led to the development of a number of margarine products with low TFA levels, targeted to health-conscious consumers. While some progress was being made in the margarine/fat spread sector, the use of partially hydrogenated vegetable oils continued to increase in other categories of processed foods. By the mid-1990s, using both dietary intake data and analysis of human tissue samples, researchers estimated that Canadians had one of the highest average intakes of TFAs in the world, which were estimated to be approximately 8.4 g/day [9].

First step - nutrition labelling regulations

In recognition of the high intake of TFAs and the impact on the health of Canadians, Canada became the first country to require that the levels of TFAs in pre-packaged food be included on the mandatory Nutrition Facts table. The nutrition labelling regulations took effect for most manufacturers in December 2005, while small and medium sized enterprises (businesses with less than $1 million in annual sales) had until December 2007 to comply. The regulations require that calories and the content of 13 core nutrients, including TFAs, be listed on the labels in a standardized format as indicated by Figure 1 [10].

Relying on mandatory nutrition labelling to reduce TFAs in the food supply had a potential drawback in that by focusing attention on the TFA content of foods, consumers may overlook the SFA content and choose foods that are lower in TFA, yet higher in the combined total of TFA and SFA. Based on this concern, in the Canadian Nutrition Facts table, SFA and TFA contents are declared, on two separate lines (expressed in grams per serving). In addition, the total of SFA + TFA is expressed as a single % daily value (based on a reference standard of 20 g) [10]. Furthermore, in order to be labelled “trans fat-free”, foods must not only contain < 0.2 g TFA but also be low in SFA, i.e. contain < 02 g of SFA and TFA combined (per reference amount and per serving of stated size) [10]. In contrast, the US labelling regulations, require the mandatory declaration of TFA at a level of 0.5 g (versus 0.2 g in Canada) per serving, and foods containing < 0.5 g TFAs can be termed “trans fat-free” without the condition that the food is low in SFA.

A limitation of the Canadian nutrition labelling regulations pertains to foods sold in restaurants and food service establishments. Generally, these foods are not considered to be prepackaged and are exempt from the nutrition labelling regulations. Health Canada recognized the importance of having nutrition information from restaurants and food service establishments available to consumers. As such, the Department worked with the Canadian Restaurant and Foodservices Association (CRFA) in the development of their “Nutrition Information Program” [11]. The Nutrition Information Program is a voluntary program that makes it easier for consumers to obtain detailed nutrition information about various menu items.

Participating chains represent 47% of total chain units in Canada.

It was envisioned that the provision of nutrition information, together with consumer education, would result in consumers making food choices aimed at decreasing their intake of TFAs. The labelling requirement to declare TFA was also intended to act as an incentive for the food industry to decrease the TFA content in their products.

As a result of the nutrition labelling regulations, accompanied by intense media attention, and mounting consumer concerns about TFAs, many companies began working to decrease TFA levels in their products [12, 13]. As a result, in 2005 average intakes of TFAs by Canadians decreased from 8g/day to 5g/day [14].

Formation of the Canadian Trans Fat Task Force

Despite the successful reduction in TFA consumption, it was recognized that in order to have consumption of TFAs by Canadians below the WHO recommendation of less than 1% of overall energy intake, i.e. approximately 2g/day, more concerted efforts would be necessary. This recognition, coupled with heightened awareness amongst the Canadian public of the dangers of TFAs, formed a favourable background for political action, which culminated in the passage of an Opposition Day motion, by a vote of 193 to 73, in the House of Commons of the Canadian Parliament in November 2004. The motion called on Health Canada and the Heart and Stroke Foundation of Canada to co-chair a multi-stakeholder task force whose mandate would be "to provide the Minister of Health with concrete recommendations and strategies to effectively eliminate or reduce processed trans fats in Canadian foods to the lowest level possible" [15]. It was recognized that any response, whether it would ultimately call for the mandatory or voluntary removal of TFAs from the food supply, collaborative solutions would have to be developed to achieve an appropriate balance among all of Canada's social and economic policy priorities. Thus, members of the Task Force, named in early 2005, included individuals from the food manufacturing and food service sectors, the federal government, non-governmental health organizations, professional associations, academia, consumer groups, and oilseed producers and processors.

Trans Fat Task Force

During the course of its work, the Trans Fat Task Force held three full-day, face-to-face meetings, various teleconferences, numerous email exchanges, and secure website postings. The Task Force also held two public consultations, one with industry and another with scientific experts, in order to hear from individuals and organizations not represented on the Task Force.

The interim report of the Trans Fat Task Force and the government response to it were released August 31, 2005 [16]. The interim recommendations: emphasized proper enforcement of the new nutrition labelling regulations, raised the need to assist smaller food manufacturers and food service operators to address the challenges associated with the replacement of TFA, encouraged the government to pursue discussions with Canada's trading partners to minimize differences in the regulation of the TFA content of food, and identified some key messages to support consumers trying to decrease their TFA intake.

Recommendations of the Trans Fat Task Force

The final report of the Trans Fat Task Force, entitled "*TRANS*forming the Food Supply", was released June 28, 2006 [17]. In this report, the Task Force recommended limiting the total amount of TFA in foods by regulation [17]. The recommendations were:

1) For all vegetable oils and soft, spreadable margarines sold to consumers or for use on site by retailers or food service establishments, the total TFA content be limited by regulation to 2% of total fat content.

2) For all other foods purchased by a retail or food service establishment for sale to consumers or for use as an ingredient in the preparation of foods on site, the total TFA content be limited by regulation to 5% of total fat content.

At the request of the Task Force, Health Canada evaluated the overall effect of limiting the TFA content of foods on the total dietary intake of TFA by modelling a number of possible scenarios. Based on the dietary intake modelling using the recommended TFA limits above, it was estimated that the average daily intake of TFA for all age groups would represent less than 1% of energy intake, consistent with the WHO recommendations [17]. The modelling results also showed that a lower limit would not provide a significant additional decrease in average TFA intake, but would increase the effort and challenge for industry [17].

Events Since the Release of the Trans Fat Task Force's Final Report

In February 2007, Health Canada updated and released its revised *Canada's Food Guide,* a tool that Canadians are encouraged to use to help make healthier food choices. For the first time, the guide contained explicit recommendations to limit TFA and SFA intakes [18]. In addition, Canadians were encouraged to read the Nutrition Facts table when making food selections, as it lists the amount of TFA and SFA a product contains, as well as other important nutrition information such as calories and the content of 13 core nutrients.

On March 27, 2007, the Standing Committee on Health, which is involved in evaluating and reporting on matters relating to the mandate, management, and operation of Health Canada, released a report on childhood obesity, entitled "Healthy Weight for Healthy Kids". Included among the report's 13 recommendations was one to establish regulations by 2008 to limit the TFA content in food, as recommended by the Trans Fat Task Force, without increasing SFA content [19].

Ministerial Announcement Regarding Trans Fat Task Force Final Report

The Minister of Health announced, on June 20, 2007, that Health Canada had adopted the recommendations of the Trans Fat Task Force to limit the amount of TFA in foods. Recognizing the significant progress that had already been made in decreasing TFA in the Canadian food supply, Health Canada gave industry a two-year window to decrease TFAs to the recommended levels; otherwise, the Department would introduce regulations to enforce the limits. The Department is currently using the 2% and 5% limits as the standard for assessing industry's performance over the

next two years. The Department is also closely monitoring the efforts of industry to ensure that significant progress is being made to achieve these limits, through its Trans Fat Monitoring Program. Finally, it was announced that results from the Trans Fat Monitoring Program would be posted on Health Canada's website.

The Trans Fat Monitoring Program

Health Canada has been analysing the TFA content of foods intermittently since the 1990's. The analysis of TFA in foods increased at the time the Trans Fat Task Force was established in order to support their work. Following the announcement of the Minister of Health in June 2007, the Trans Fat Monitoring Program was established [20] to analyse the TFA content of foods that were, as indicated by earlier surveys, significant sources of TFA, i.e. foods with high levels of TFA or foods with lower levels of TFA that were consumed in large quantities by a large number of consumers.

For pre-packaged foods, the individual products that were analysed represented the majority of products sold within a particular food category and for most foods categories, represented approximately 80% of the market share. Additionally, foods from the major fast food chains and family restaurants were analyzed. Three Health Canada laboratories (Ottawa, Toronto, and Winnipeg) performed the analyses. The full details of the sample collection, analytical methods, quality assurance program, and the data for individual food products, organized by food category, company, and brand name within each category can be found on Health Canada's website [20]. The data are presented alphabetically by food category in a standard format and include the sampling date, the percentage of total fat in the food, as well as TFA and SFA as percentages of total fat.

In preparation for the release of each data set, Health Canada officials met with stakeholders from the health and industry sectors. The stakeholders included: Heart and Stroke Foundation of Canada, Canadian Restaurant and Foodservices Association, Food Processors of Canada, Baking Association of Canada, Food and Consumer Products of Canada, Canadian Council of Grocery Distributors, and Vegetable Oil Industry of Canada. The objectives of the stakeholder meetings were to help the Department gain support for its strategy while recognizing the progress that had already been made. The meeting with industry stakeholders also provided an opportunity for companies to inform the Department of any product changes that had occurred since the collection of data, and to provide current reliable data. Meetings were also held with commercial analytical laboratories to verify that the methodology used by these accredited laboratories, on behalf of companies to analyze the TFA content of reformulated products, was consistent with the methods and standards used by Health Canada for the Trans Fat Monitoring Program. Raw data and chromatograms were reviewed by Health Canada prior to inclusion of the industry data in the tables. Such additional data was identified with a footnote indicating the source of the data.

First Set of Trans Fat Monitoring Program Data

The first set of Trans Fat Monitoring Program data, posted December 20, 2007 [21], represented food samples that were collected in 2005, 2006, and spring 2007 from

major grocery stores and fast food and family restaurant establishments. Samples of foods from fast food and family restaurant establishments included: chicken strips/nuggets, donuts, fish products, french fries, miscellaneous fast foods (e.g. apple turnovers or hash browns), muffins, and onion rings. Samples of pre-packaged foods from grocery stores included: cookies, crackers, frozen potato products (frozen french fries etc.), frozen chicken strips/nuggets, granola bars, and muffins.

Results and Highlights of the First Set of Trans Fat Monitoring Program Data

The results indicated that in all food categories targeted, a number of food manufacturers successfully decreased the level of TFA fat in their products to levels below those recommended by the Trans Fat Task Force. For example, by the fall of 2006, as depicted in Figure 2, 60% of cookies, 85% of crackers, 83% of frozen chicken products and 75% of frozen potato products sampled contained < 5% TFA. The data also showed that in many cases, these reductions were much lower than the 5% limit and that the reductions were achieved by using healthier alternatives and not by increasing the levels of SFA.

Second Set of Trans Fat Monitoring Program Data

The second set of monitoring data was published on the Health Canada website on July 21, 2008 [22]. It included data for foods analyzed from 2005-2008. Foods from restaurants and fast food chains were expanded and included data from the top burger, chicken, and pizza chains, and top family restaurants. This data set also included data from some of the medium sized family restaurants and fast food chains that were not part of the previous analyses. Specifically, the data from family restaurants and fast food chains included updated data on: chicken strips/nuggets, donuts, fish products, pizzas, french fries, miscellaneous fast foods (ex. apple turnovers or hashbrowns), and onion rings. Pre-packaged foods included: frozen pizzas, garlic breads, garlic spreads, soft margarines, hard margarines, vegetable shortening, and lard.

Results and Highlights from the Second Set of Trans Fat Monitoring Program Data

Highlights from the second set of monitoring data show continued progress in decreasing the levels of TFA in products from various food categories and positive changes to meet the targets recommended by the Trans Fat Task Force and adopted by Health Canada. Additionally, most of the top fast food and family restaurant chains in Canada have been successful in decreasing TFA levels in menu items that had previously been high in TFA such as french fries, chicken products, fish products, and pizzas, indicated in Figure 3. There has also been some progress in decreasing TFA levels in soft margarines.

Trans Fat Monitoring Program - Moving Forward

The work of the Trans Fat Monitoring Program is continuing. It is expected that the next set of monitoring data will be released early this year (January 2009). As with the first and second data releases, Health Canada will work with stakeholders prior to the publication and continue to encourage the replacement of TFA with healthier alternatives such as monounsaturated and polyunsaturated fats rather than replacement of TFA with SFA.

Conclusions

Impact of Initiatives

Taken together, there is evidence that the different TFA reduction strategies are having the desired effect in Canada. The nutrition labelling regulations and the work of the Trans Fat Task Force, at least in part, have helped to reduce TFA in pre-packaged foods. Additionally, from the Trans Fat Monitoring Program, we have seen that many fast food and family restaurant chains in Canada have been successful in decreasing TFA in menu items that were previously high in TFA, such as french fries, chicken products, fish products, and pizzas. This is especially important given that the nutrition labelling regulations do not apply to most foods sold in restaurants and food service establishments. Finally, active interest by the media and stakeholders in increasing awareness and in pressuring industry to meet the challenges associated with decreasing the TFA content of foods has also helped to further the TFA reduction initiatives. The media have not only promoted the release of the revised *Canada's Food Guide,* but also have reported on the issues surrounding TFAs, the associated health risks, how to identify TFAs, common sources of TFAs in the Canadian diet, as well as steps to follow to reduce TFA intake.

The Canadian experience with the reduction of the TFA content of foods, indicates that success can be achieved when all sectors work collaboratively searching for solutions to address this important risk factor to human health.

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Figures:

Nutrition Facts Per 1 burger (130 g)	
Amount	% Daily Value
Calories 200	
Fat 9 g	**14** %
Saturated Fat 2 g + Trans Fat 1 g	**15** %
Cholesterol 70 mg	
Sodium 800 mg	**33** %
Carbohydrate 4 g	**1** %
Fibre 0 g	**0** %
Sugars 0 g	
Protein 25 g	
Vitamin A 0 %	Vitamin C 0 %
Calcium 4 %	Iron 2 %

Figure 1: Example of a standardized Canadian Nutrition Facts table showing the required labelling of the saturated and trans fat content of food (g/serving as well as combined % daily value). Source: Health Canada, 2006: http://www.hc-sc.gc.ca/fn-an/label-etiquet/nutrition/cons/inl_main-eng.php

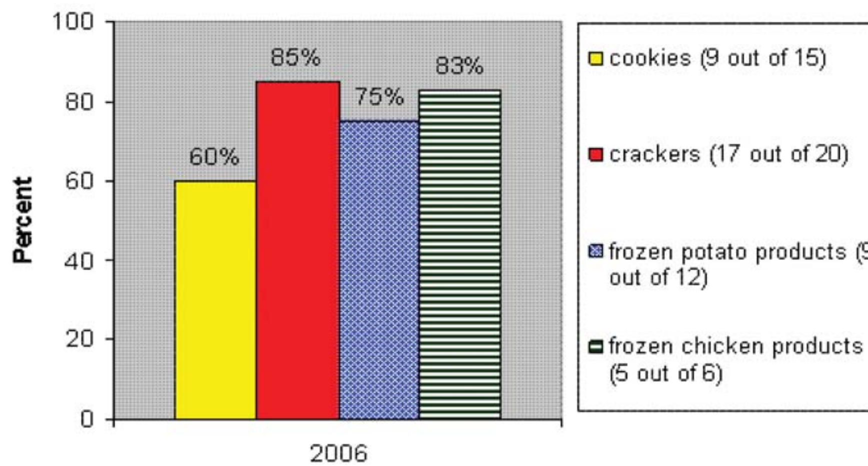
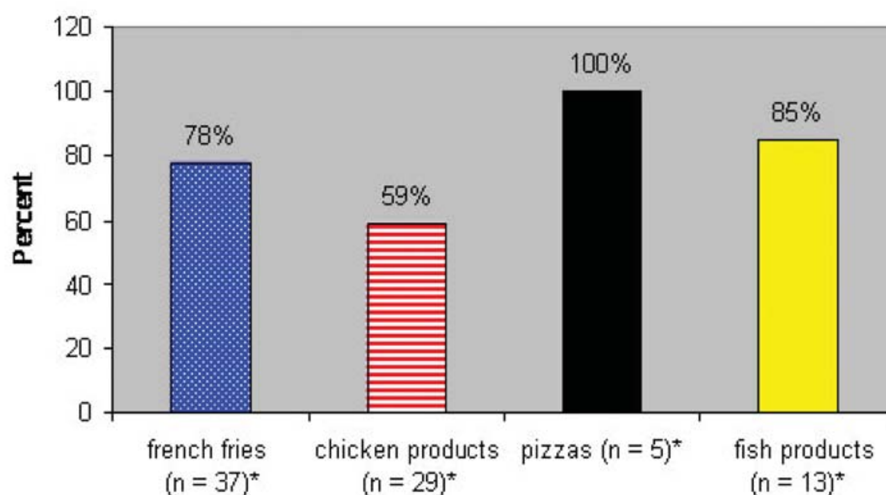


Figure 2: Percent of pre-packaged foods collected and analysed from grocery stores in Canada meeting the 5% trans fat of total fat limit in 2006. Source: Health Canada, 2007: http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/tfa-age_first-data_prem-donn-eng.php#highlights



* indicates the number of restaurant and fast food chain establishments sampled

Figure 3: Percent of restaurants and fast food chains with french fries, chicken products, pizzas, and fish products meeting the 5% trans fat of total fat limit in from 2006-2008. Source: Health Canada, 2008: http://www.hc-sc.gc.ca/fn-an/nutrition/gras-trans-fats/tfa-age_sec-data_deux-donn-eng.php#high

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Global agriculture, food and nutrition: Some trends and challenges to 2050

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Abstract

Over the next decades, the world's food and agricultural system faces a number of important challenges. Global demand for food, feed and fibre will nearly double while, increasingly, crops may also be used for bioenergy and other industrial purposes. New and traditional demand for agricultural produce will put growing pressure on already scarce agricultural resources. And while agriculture will be forced to compete for land and water with sprawling urban settlements, it will also be required to serve on other major fronts: adapting to and contributing to the mitigation of climate change, helping preserve natural habitats, protecting endangered species and maintaining a high level of biodiversity. As though this were not challenging enough, fewer people will be living in rural areas and those remaining will need new technologies to grow more food from less land, with fewer hands. Only a few of these problems can be dealt with in this paper, and the few identified as important cannot be examined in great detail. The space available only permits to provide is a brief overview of the major trends and challenges, focusing on the demands arising from rising food needs, the needs to produce bioenergy feedstocks and the additional pressures on agriculture through adaptation to and mitigation of climate change.

[1] The views expressed in this paper reflect those of the author, not necessarily those of the Organization.

1. The main drivers

One of the key drivers of future demand on the world's resource base is its growing population. Globally, population is projected to grow from 6.5 billion in 2005 to nearly 9.2 billion by 2050. To feed a population of more than 9 billion, global food production must nearly double by 2050. While meeting such an increase in food production will be no mean achievement for world agriculture, the growth in output required to accomplish this will be below rates attained in the past.

Three principal factors are at the heart of the slowdown in growth that is needed to meet the world's food needs to 2050. The *first* lies in the projected evolution of global demographics which is characterised by a drastic slowdown in global population growth over the next five decades. Population growth started to slow in the late 1990s and will continue decline over the next five decades; between 2030 and 2050, global population growth is expected to slowdown to rates below 0.5 percent per annum (Table 1) and could come to a complete halt by 2075. The *second* factor reflects the fact that a growing share of world population has been attaining fairly high levels of per capita food consumption, beyond which the scope for further increases is rather limited (Table 2). Clearly, further consumption growth is expected from a change in nutrition patterns away from carbohydrates rich diets towards diets rich in meat and other livestock products. But even the change in nutrition patterns will not suffice to alter the slowdown in growth markedly. The *third* factor reflects the fact that there will be millions of people with incomes too low to afford more food; their food demand potentials will not translate in effective food demand and will therefore not need to be produced by the world's agricultural system.

The data and projections for global and regional population growth are shown in Table 1. The world population of 6124 billion of 2000 is projected to grow to 8318 million in 2030 and to 9191 million in 2050. Despite the overall increase, the rate of growth is declining. The growth rate of world population peaked in the second half of the 1960s at 2.04 percent p.a. fell to 1.35 percent p.a. by the second half of the 1990s and will decline to 0.5% between 2030 and 2050. Despite the drastic fall in the growth rate, the absolute annual increments continue to be large. Seventy nine million persons were added to world population every year in the second half of the 1990s and the number will remain at over 50 million p.a. until the mid-2030s. More rapid declines after 2035 should bring the annual increment down to 26 million by 2050. Practically all these increases will be in the developing countries. Within the developing countries themselves, there will be increasing differentiation. While East Asia will have shifted to negative demographic growth (-0.2 percent p.a.) by 2040, sub-Saharan Africa's population will still be growing at 1.5 percent between 2030 and 2050. By 2050, 18 million of the 26 million added annually to world population will be in sub-Saharan Africa. Some countries, mostly in Africa, have demographic projections suggesting that their populations in 2050 would be rather sizeable multiples of their current ones. This prospect raises the serious issue whether significant improvements in food consumption and nutrition could be achieved in the foreseeable future. In conclusion, rapid population growth could continue to be an important impediment to achieving improvements in food security in some countries, even when world population ceases growing.

Table 1: Population data and projections

	Population (million)					growth rates, percent per annum			
	1970	2000	2015	2030	2050	1970 -00	2000 -30	2030 -50	2000 -50
World	3699	6124	7295	8318	9191	1.7	1.0	0.5	0.8
Developed	1088	1334	1406	1439	1435	0.7	0.3	0.0	0.1
Developing	2610	4790	5889	6879	7757	2.0	1.2	0.6	1.0
sub-Saharan Africa	270	635	922	1256	1706	2.9	2.3	1.5	2.0
Near East and North Africa	184	395	516	632	752	2.6	1.6	0.9	1.3
Latin America and Caribbean	287	523	628	713	769	2.0	1.0	0.4	0.8
South Asia	704	1374	1727	2027	2277	2.3	1.3	0.6	1.0
East Asia	1166	1864	2096	2251	2253	1.6	0.6	0.	0.4

Source: UN Population Assessment, 2006, own aggregation

2. Food needs, hunger and the double burden of malnutrition

Food consumption, in terms of kcal/person/day, is the key variable used for measuring and evaluating the evolution of the world food situation. The world has made significant progress in raising food consumption per person. In the three decades to 1999/01, it increased from an average of 2400 kcal/person/day to almost 2800 kcal/person/day (Table 2). This growth was accompanied by significant structural change. Diets shifted towards more livestock products, vegetable oils, etc. and away from staples such as roots and tubers (Tables 2.7 and 2.8). The increase in world average kcal/person/day would have been even higher but for the declines in the transition economies in the 1990s.

The gains in the world average reflected predominantly those of the developing countries, given that the industrial countries and the transition economies had fairly high levels of per capita food consumption already in the past. This overall progress of the developing countries has been decisively influenced by the significant gains made by the most populous among them. There are currently 8 developing countries with a population of 100 million or more. Of them, only Bangladesh remains at very low levels of food consumption. China, Indonesia, Brazil and Mexico have made the transition to fairly high levels (in the range 2900-3150 kcal). In more recent years (from the late 1980s) India and Pakistan also made some progress and are now approaching middling levels of per capita food consumption after long periods of near stagnation. Nigeria's data show that the country raised per capita food consumption significantly to medium-high levels in the decade starting in the mid-eighties.

Table 2: Per capita food consumption (kcal/person/day)

	1969/71	1979/81	1989/91	1999/01	2015	2030	2050
World	2411	2549	2704	2789	2950	3040	3130
Developing countries	2111	2308	2520	2654	2860	2960	3070
sub-Saharan Africa	2100	2078	2106	2194	2420	2600	2830
- excluding Nigeria	2073	2084	2032	2072	2285	2490	2740
Near East / North Africa	2382	2834	3011	2974	3080	3130	3190
Latin America and Caribbean	2465	2698	2689	2836	2990	3120	3200
South Asia	2066	2084	2329	2392	2660	2790	2980
East Asia	2012	2317	2625	2872	3110	3190	3230
Industrial countries	3046	3133	3292	3446	3480	3520	3540
Transition countries	3323	3389	3280	2900	3030	3150	3270

The progress in raising per capita food consumption to over 3000 kcal/person/day in several developing countries is not always an unmixed blessing. The related diet transitions often imply changes towards energy-dense diets high in fat, particularly saturated fat, sugar and salt and low in unrefined carbohydrates. In combination with lifestyle changes, largely associated with rapid urbanization, such transitions, while beneficent in many countries with still inadequate diets, are often accompanied by a corresponding increase in diet-related chronic Non-Communicable Diseases (NCDs). In many countries undergoing this transition, obesity-related NCDs tend to appear when health problems related to undernutrition of significant parts of their populations are still widely prevalent. The two problems co-exist and these countries are confronted with a “double burden of malnutrition” resulting in novel challenges and strains in their health systems.

Hunger and malnutrition

Notwithstanding further progress towards a better-fed world, not all countries are likely to achieve food consumption levels sufficient for good nutrition. Particularly some of the countries which start with very low consumption (under 2200 kcal/person/day in 1999/01), high rates of undernourishment, high population growth rates, poor prospects for rapid economic growth and often meagre agricultural resources are unlikely to attain significant improvements. There are 32 countries in this category, with rates of undernourishment between 29 percent and 72 percent, an average of 42 percent, Yemen and Niger among them. Their present population of 580 million is projected to grow to 1.39 billion by 2050, that of Yemen from 18 million to 84 million and that of Niger from 11 million to 53 million. Their current average food consumption of 2000 kcal/person/day is actually a little below that of 30 years ago. Despite the dismal historical record, the potential exists for several of these countries to make gains by assigning priority to the development of local food production, as other countries have done in the past. Under this fairly optimistic assumption, the average of the group may grow to 2450 kcal in the next 30 years, though this would still not be sufficient for good nutrition in several of them. Hence the conclusion that reducing undernourishment may be a very slow process in these countries.

While local hunger problems will persist or even aggravate, developing countries as a whole are expected to record significant reductions, at least in the prevalence of undernourishment (percent of population affected). In contrast, reduction in the absolute numbers is likely to be a slow process. Numbers could decline from the 810 million in 1999/01 to 580 million in 2015, to 460 million in 2030 and to just over 290 million by 2050. This means that the *number* of undernourished in developing countries, which stood at 823 million in 1990/92 (the 3-year average used as the basis for defining the World Food Summit target), is not likely to be halved by 2015. This is particularly so after the massive increases in undernourishment caused by the food price spike in 2007/08. For 2007, the FAO State of Food Insecurity in the World (SOFI) reported an increase in the number of undernourished by 75 million due to high food prices alone. Overall, the number of undernourished increased to 923 million people by the end of 2007. More recent analysis suggests that the high prices prevailing during the first half of 2008 have further increased the number of hungry to 968 million people.

Despite these recent setbacks in reducing undernourishment, the projections do imply considerable overall improvement. In the developing countries the numbers well-fed (i.e. not classified as undernourished according to the criteria used here) could increase from 3.9 billion in 1999/01 (83 percent of their population) to 5.2 billion in 2015 (90 percent of the population), to 6.2 billion (93 percent) in 2030 and to 7.2 billion (96 percent) by 2050. That would be no mean achievement. Fewer countries than at present will have high incidence of undernourishment, none of them in the most populous class. The problem of undernourishment will tend to become smaller in terms of both absolute numbers affected and, even more, in relative terms (proportion of the population), hence it will become more tractable through policy interventions, both national and international.

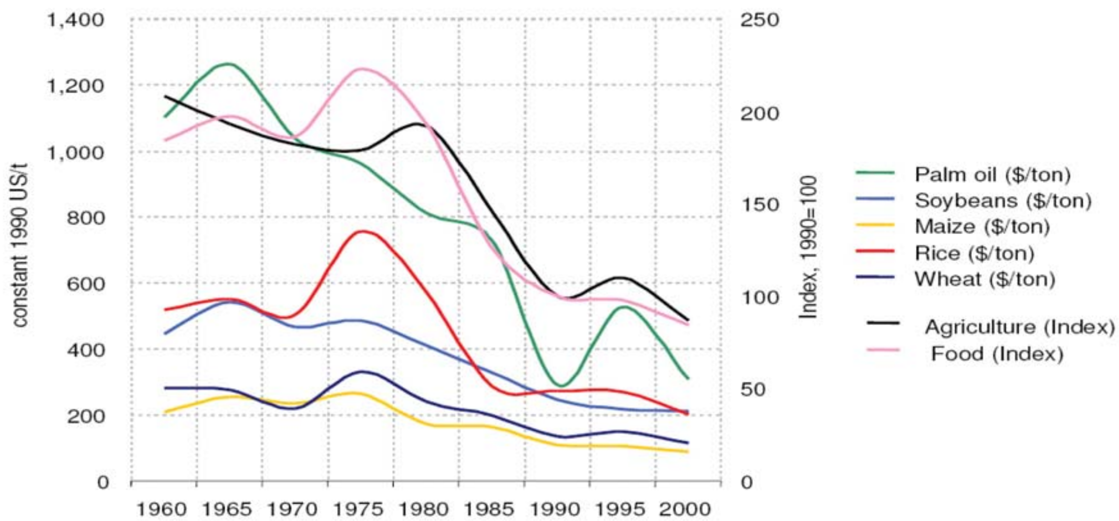
3. Fuel needs

For decades, global agricultural markets have been characterised by steady production and productivity growth, slowing demand and as a result, falling real prices for agricultural produce. From 1973 to 2000, for instance, food prices fell by about 60% and agricultural prices by about 55% in real terms (World Bank). While the decline over the last four decades was particularly pronounced, it was part of a longer-term trend observed during the entire century not only in international markets but in regional and national markets as well. Over the last century, real prices for agricultural and food products in the US declined by 72 per cent and 76 percent, respectively (Gardner, 2002).

This secular decline in real prices for food and agricultural products rested on two main pillars. On the *supply* side, rapid technological progress in agriculture meant lower unit costs of production and, with competition in product markets, lower profit margins per unit of output and lower commodity prices. On the *demand* side, slowing population growth, growing saturation levels but also unmet potential demand of a stubbornly high share of poor people put a lid on demand growth. Without major new demand sources, and in view of the world's large untapped cropland and yield potentials (Bruinsma, 2003) there would be no obvious reason to assume that the long-term decline in real prices would come to abrupt halt. High energy prices from 2006 to mid-2008 however revealed that significant extra demand could emerge from the global

energy markets, a potentially much larger market and thus much more difficult to satiate market. It is therefore imperative to examine how large the potential of energy markets is, how much and what type of agricultural produce is competitive in the energy markets and how this growing competition is changing price formation in commodity markets.

Figure 1: Real prices for food and agriculture



Source: World Bank, "Pink Sheets"

The overall size of the energy market in terms of world's Total Primary Energy Supply (TPES) has reached a level of about 500 Exajoule[2] (EJ) in 2008. The IEA expects TPES to grow at a rate of 1.6% to 2030 to reach a level of more than 710 EJ and could further rise according to other estimates to a level of about 850 EJ by 2050. The current and prospective energy demand can be juxtaposed with the theoretical, technical and economic potential of energy that can be produced through bioenergy. The theoretical potential is essentially given by the energy produced through photosynthesis which exceeds a level of 3000 EJ/a; about two thirds of this energy is coming from maritime photosynthesis and is therefore not available for direct use, at least not with current technologies. The same holds for the largest share of terrestrial photosynthesis. For the year 2000, Fischer and Schrattenholzer estimated that about one fifth of the terrestrial biomass or 225 EJ could be regarded to have a technical potential. This technical potential could rise to about 400 EJ by 2050. For both points in time, i.e. for 2000 and 2050, the technical potential would amount to about 50% of overall energy needs. Obviously, this technical potential needs to be qualified further. First, it reflects the potential that is contained in the primary biomass, but not

[2] 1 EJ=10^{18} Joule

necessarily the energy available in the form of the final biofuels ready for consumption. At current conversion technologies and current feedstock composition, only about a third of the biomass is eventually available for final consumption. Moreover, the largest part of the technical biomass potential consists of biomass from forests and other lignocellulosic sources of bioenergy, i.e. a potential that cannot yet be tapped into for biofuel production at all or only with considerable conversion efforts and costs. While interesting in principle, neither the theoretical nor the technical potential are of relevance in practice. Of practical relevance is only that part of the technical potential that can be competitively supplied from the bioenergy markets into the overall energy markets, i.e. the economic potential.

The size of the economic potential crucially depends on the prices for fossil energy, prices for agricultural feedstocks as well as subsidies or protection measures that make otherwise uncompetitive feedstocks competitive for the overall energy market. At relatively low feedstock prices and relatively high energy prices in 2006, a number of agricultural feedstocks became indeed competitive sources of energy. While competitiveness was initially provided through subsidies and trade measures, the rapid rise in energy prices drove up profit margins for bioenergy producers and created new demand for bioenergy feedstocks. For some feedstocks such as maize in the US or rapeseed in Europe, this new demand from the energy sector created a quasi intervention system and an effective floor prices for agricultural produce. With higher energy prices the range of products competitive in the energy markets has increased, strengthening the floor price effect for agriculture in general (Schmidhuber, 2006). Differently put, the economically large energy markets have created perfectly elastic demand for agricultural produce at parity prices (break even points for biofuel producers) and thus a minimum price for agricultural products. As the production of essentially all agricultural commodities ultimately competes for the same resources (land, water, capital), the demand created by the large energy market establishes indirect price support and thus floor price effects for essentially all agricultural products.

The impacts of an increased bioenergy use on food security are difficult to gauge. A priori, competition with food production will result in lower food availability and an increase in food expenditures for all. High shares of food expenditures mean that the poor stand to suffer the most from higher food prices. Particularly net buyers of both food and energy are hard hit by the parallel increase in food and energy prices. As net buyers of food and energy, the poorest of the poor could be particularly affected.

At the country level, many developing economies are currently facing a double burden on their current account balance through higher expenditures for food and energy imports. The same holds for individual households that are both net buyers of food and energy. In general, subsistence farmers and urban dwellers are likely to suffer the most. By contrast, commercial farmers stand to benefit both through higher prices for their produce and higher volumes of marketable production. Moreover, if the incentives of higher agricultural prices can be sustained for a longer period of time, this should improve the overall viability of agricultural production and rural areas more generally, promote much needed investment in agricultural technology, rural infrastructure and eventually help improve the longer-term resilience of food production systems.

4. Climate Change

In addition to meeting future food demand and contributing future fuel needs, global agriculture will have to cope with the burden of climate change. This burden will be twofold: The first and most obvious one emerges from the need to adapt agricultural production to the new and often much more difficult agro-ecological conditions brought about by climate change; the second burden arises from the fact that agriculture is the single most important source of greenhouse gas emission (>30 % of total GHG emissions) and may therefore have to make a contribution to climate change mitigation.

Adaptation

The International Panel on Climate Change (IPCC) has documented the impacts of climate change on agriculture in considerable detail. Its fourth assessment report (AR4) published in 2007 (IPCC, 2007) often makes for alarming reading. If, for instance, temperatures rise by more than 2°C, the global food production potential is expected to contract severely and yields of major crops like maize may fall globally. The declines will be particularly pronounced in lower latitudes. In Africa, Asia and Latin America yields could decline by as much as 20-40 percent.

In addition, severe weather occurrences such as droughts and floods are likely to intensify and cause greater crop and livestock losses. The IPCC also reports that farmers are already adapting to hotter and more variable growing conditions determined by climate change (IPCC, 2007). The report stresses that much greater adaptation efforts will be required to fully address the impacts resulting from the warming which is unavoidable due to past emissions. The burden will be highest in areas with the lowest capacity to adapt to climate change (agriculture in arid and semi-arid areas).

Technical adaptation measures range from temporal and spatial variations in production systems (e.g. adjusting planting or fishing dates, rotations, multiple cropping/ species diversification, crop-livestock pisciculture systems, agroforestry) to confer better protection against temperature changes, changing rainfall variability and patterns, salinization though sea level rise, and pest attacks - to investing in soil, water and biodiversity conservation and development (e.g. building soil biomass, restoring degraded lands, rehabilitating rangelands, harvesting and recycling water, planting trees, developing adapted cultivars and breeds, protecting aquatic ecosystems) in order to maintain long-term productivity. While no comprehensive assessment of the adaptation needs required is yet available, it is likely that even minimal adaptation measures will require massive extra investments in agriculture.

Mitigation

The second burden on agriculture will emanate from the need to contribute to climate change abatement. As agriculture produces more than 30% of global GHG emissions, the pressure on the sector to reduce its share will rise. The IPCC estimates that the global technical mitigation potential for agriculture (excluding forestry) will be between 5,500 and 6,000 Mt CO2-equivalent per year by 2030, 89% of which is assumed to be from carbon sequestration in soils. The need to make agriculture more

climate-compatible will pose an added challenge for long-term agricultural development. Various policy instruments are currently discussed that will help internalise the external costs of greenhouse gas emissions.

In general, these measures can be grouped into two rubrics. The first includes measures that will reward efforts made in agriculture to reduce emission. The potential in agriculture to help lower GHG emissions appears to be considerable. Tapping into this potential could also afford agriculture new and important opportunities to develop more sustainable forms of land use and livestock production and, more generally, to protect the environment. In practice, these entail measures such as a shift from till to no-till agriculture, afforestation of cropland or pasture land or the use of highly efficient, second generation forms of bioenergy.

The financial instruments to tap into these resources are still emerging and those available are not yet fully exhausted. Between 2008 and 2012, for instance, mechanisms such as the GEF, the CDM and other mechanisms offer a total of US$20 billion, at least 10% of which could be had for agriculture and forestry. The second group includes measures that tax GHG emission through agriculture and thus ultimately agricultural production. Obviously, taxation will vary with the carbon intensity (footprint) of various agricultural production activities. Highly polluting activities such as deforestation or ruminant and rice production could be taxed more than other less carbon-intensive forms of agricultural activities. These taxes will inevitably result in higher costs of production and ultimately in higher prices for food.

Summary

The 21st century will pose important challenges for the world's food and agricultural system. The space available in this paper allowed considering only three of them and only in a very cursory way: Food needs, climate change and new demands from the energy sector. Meeting the world's food needs in the absence of other demands should be a manageable challenge. The drastic slow-down envisaged for world population growth in conjunction with a growing saturation of food consumption is expected to keep a lid on growth in food needs. Much more rapidly growing and larger demand, however, could arise from the energy market. In a world of high energy prices, a growing share of agricultural produce could become competitive in the energy market. Effectively, this creates (perfectly) elastic demand for agricultural feedstocks, keeps agricultural prices high and could thus pose an extra challenge in the fight against hunger. The need to adapt to and help mitigate the impacts of climate change, the third challenge described in this paper, poses a double challenge for global agriculture; as the single largest emitter of GHG, agriculture could increasingly be burdened with the need to help abate GHG emission. At the same time, many farmers, often already producing in marginal agro-ecological conditions, will have to adapt to and cope with a deterioration of their production environments caused by climate change.

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Addressing the double burden of malnutrition

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Introduction

The global burden of disease and disability has traditionally been characterized for developing countries by predominance of endemic and epidemic infectious diseases (IDs) and for industrialized countries by the burden of non communicable chronic degenerative diseases (NCDs). Under nutrition and micronutrient deficiencies mostly affect children and women of fertile age while nutrition related NCDs affect adults and older people. In this context malnutrition affects the incidence and aggravates the severity and duration of infectious diseases. Also, as recently shown malnutrition may potentiate the virulence of some infectious agents. The enormous scale of the estimated global burden of death and disability currently associated with malnutrition among young children in the developing world contrasts with the relative preponderance of disability and death caused by non-communicable chronic diseases NCDs in industrialized countries. These most often result from changes in diet and physical activity patterns induced by economic affluence and are linked to advanced age. In these classic characterizations, under-and over-nutrition are presented as opposites ends of a spectrum. They are contrasted against each another in terms of number of deaths, disability adjusted life years (DALYs) and their contingent economic costs. This is an overly simplistic approach which leads to competing research and policy agendas and great public confusion; it detracts from our need to concentrate on solving the existing problems in which under nutrition and nutrition related chronic diseases (NRCDs) are intertwined. Epidemiologic and nutrition transitions have now been documented in most countries in the world making nutrition related NCDs or NRCDs the main cause of death and disability globally. The transition has mostly brought benefits in terms of increased life expectancy, due to a combination of falling neonatal deaths, increased infant and child survival and extended longevity of adults. The appearance of these transitions underscores the need to see the effects of nutrition on

health and wellbeing as a continuum across the life span with multiple interlocking consequences. As more people reach older ages greater emphasis needs to be placed on NRCDs, many of which originate in early life. The prevention of obesity, diabetes, heart disease and cancer was not considered relevant to developing countries until recently; these were considered diseases of affluence. However, both the absolute numbers and the age adjusted rates of these diseases are becoming progressively more important in developing countries. In examining the current situation, it is evident that most NRCDs and the corresponding risk factors are common in both developing and developed countries alike, perhaps with the sole exception of underweight and specific micro nutrient deficiencies. In addition the high prevalence of chronic conditions in later life not only increases the burden of disease of older people but will also clearly affect the allocation of financial resources and thus potentially undermine a country's capacity to address malnutrition and other health problems for all members of society. There is a clear need to re-examine the many faces of malnutrition and address them with a common agenda which recognizes the full spectrum of nutrition related death and disability. This requires that we make a case for the expansion of the basic definition of malnutrition to one which encapsulates malnutrition in all its forms.

Malnutrition in all its forms

In the new global nutrition and health scenario, it is clear that the basic definition of malnutrition is not sufficient. The term malnutrition in all its forms encompasses underweight and overweight, wasting and stunting, micronutrient deficiencies and NRCDs. Underweight is defined by a low weight-for-age, yet a child may be underweight because s/he is wasted (low weight-for-height) or stunted (low height-for-age) or both. Conversely a child may be stunted but overweight for his/her length. Within the underweight category, wasted and stunted children must be considered separately since they need to be approached differently in their treatment and follow up. We can no longer ignore the fact that among the undernourished as defined by stunted linear growth there exist many that are of normal weight for their length and some that are overweight for their length. Importantly, since length is not systematically assessed in defining nutritional status of populations we may easily overestimate the prevalence of undernutrition and neglect the problem of excess body fat stores. It follows that if we aim to tackle malnutrition in all its forms length must be systematically measured and assessed in all children. Acute wasting is an important form of malnutrition and requires particular attention especially within the context of emergencies caused by famine (acute and chronic) and conflict. Acute wasting is significantly associated with child survival since it has a direct impact on resistance to infection and thus defines who survives and who dies. Effective treatment and control of acute wasting are essential if we are to reduce hunger and mortality in children in accordance with the internationally agreed Millennium Development Goals. Micronutrient deficiencies also form part of the broader definition of malnutrition. Poor quality of diets can lead to inadequate intakes or deficiencies in one or more micronutrients, and where possible, we should attempt to determine the common underlying dietary causal factors. For example, epidemiological risk analysis indicates that iron and zinc deficiencies frequently occur together; similarly vitamin A deficit is observed in infants and mothers subsisting on single staple foods (cereals or tubers). Integrating findings in this

manner, and examining need for changes in dietary patterns rather than targeting individual nutrients, may provide more sustainable long term solutions. Finally, at the other end of the spectrum, any new definition of malnutrition must now also include NRCDs. These chronic diseases commonly presenting in adults, are related to long term patterns of diet and physical activity. Prevention for these conditions therefore starts with the achievement of optimal fetal and infant growth and continues throughout the life course with the promotion of healthy diets and active living. The ultimate goal is that we should not only survive the ills related to child infection and malnutrition but that we live the majority of our lives free of the disabilities of acute and chronic illnesses extending our longevity towards the upper range of the human lifespan.

Reductionist approaches to nutrition have served to gain important knowledge on the effects of specific nutrients at the molecular, cellular, organ and whole body level. However this approach will not necessarily bring us closer to providing coherent guidance to policy makers to achieve better population health and well being. If we are going to bridge the gap between present knowledge and population nutritional status and health we need to use integrated approaches to address malnutrition in all its forms with a life course perspective. Such approaches are also more likely to attract the interest of the public and policy makers, and thus bring us closer to effective action nationally and globally. Agreeing on a definition of malnutrition in all its forms will encourage more widespread usage and hopefully contribute to developing a common agenda for action.

Addressing the pending burden of undernutrition and micronutrient deficits

Undernutrition as assessed by abnormal anthropometric measures and micronutrient deficiencies are frequently interrelated. For example, the disease outcome diarrhea is associated with vitamin A and zinc deficiencies as well as stunting. In contrast, certain micronutrient deficiencies such as iodine and iron may occur in children with normal somatic growth. This is further complicated by the fact that the consequences of certain micronutrient deficiencies may in fact be dependent on their effects on growth. For example, approximately half the effect of zinc deficiency is mediated by stunting; the rest is a direct effect on morbidity and mortality, probably as a result of impaired immune function. Analyses of the population attributable risk of malnutrition should therefore consider the effects of not only single but also combined micronutrient deficits together with other measures of malnutrition such as somatic growth.

While the risks related to sub-optimal breastfeeding may in part be due to micronutrient deficiencies resulting from inadequate dietary intake by the infant, they are more importantly due to the role of breast milk in preventing infections. The disease burden attributed to sub-optimal breastfeeding cannot be added to that of undernutrition without considering their joint effects; however it is nonetheless appropriate to consider breastfeeding practices as one of the most significant modifiable risk factors for infectious disease in infants. Effective interventions are also available to reduce stunting, micronutrient deficiencies and child deaths. If implemented at scale, they would reduce DALYs and child deaths by about a quarter in the short term. Systematic reviews of available evidence on effectiveness of interventions published in the Lancet

Series on Maternal and Child Undernutrition indicate that breastfeeding counseling and vitamin A and zinc fortification/supplementation have the greatest potential to reduce the burden of child morbidity and mortality. The reviews also suggest that enhancing complementary feeding via nutrition counseling for food secure populations and nutrition counseling, food supplements and/or conditional cash transfers in food insecure populations could also substantially reduce stunting in the short term. Elimination of stunting, however, will require long term investments to improve education, economic status and empowerment of women. The evidence base in the systematic reviews for maternal health is weaker, but there is some evidence that nutrition interventions such as iron and folic acid supplements and targeted balanced energy and protein supplementation may make a difference to maternal health and birth outcomes. Collectively, the anthropometric and micronutrient deficiencies examined in the recent Lancet Series on Maternal and Child Undernutrition accounted for approximately 30% of total deaths and disease burden in children under 5 years of age, which equates to nearly 9% of the total global disease burden in all ages. This enormous pending burden highlights the need for immediate and concerted efforts to implement known effective actions.

Addressing the prevention of diet related chronic disease with a life course perspective

A common denominator for an integrated view of health and nutrition is a systematic "life-course" approach. This is based on the compelling and highly relevant relationship that exists between the processes of undernutrition and poor growth in fetal life or early infancy and metabolic and malignant diseases of adult life. The epidemiology of the early origins of adult disease and the concept of early life programming based on a persistence of a nutrient-conserving metabolic pattern throughout the lifespan, emphasize health over disease in the relationship of nutrition, early growth, metabolic imprinting, and vulnerability to chronic disease. The postulate of the "Developmental Origins of Health and Disease (DOHaD)" hypothesis is that the early environment programs metabolism, organ growth and functional development in an irreversible manner even after the original deprivation has been resolved. Programming may be explained by structural changes of organs induced during early development, or by epigenetic modifications that permanently modify the patterns of gene expression which in turn affect organ function at later stages in the life course. These changes are associated with permanent changes in physiology and / or structure that will predispose individuals to obesity and other NRCDs in later life.

The relationship between low birth weight and later occurrence of central obesity, insulin resistance, type 2 diabetes, hypertension, and cardiovascular disease has been documented in a number of epidemiological studies conducted mostly in industrialized countries, and in follow-up studies of historic cohorts from transitional countries. In most developing regions low birth weight, and underweight and stunting in young children, coexists with overweight and obesity in older children, adolescents and the adult population. Thus, the DOHaD hypothesis may be most relevant to present and future public health in these countries. Analyses of the five existing cohort studies from developing countries (India, Guatemala, South Africa, Brazil and the Philippines) have recently been reported. These cohorts were established in 1975 to 1990 and with

some interruptions subjects have been followed to the present. In India, Guatemala and Brazil, birth weight was positively associated with Body Mass Index (BMI) at age 25-30 yrs, yet the association was stronger for lean mass than for fat mass. The links between birth weight and later occurrence of NRCDs have proven more difficult to elucidate and the results are not fully consistent across studies. However the studies differ widely in the degree of early malnutrition, the presence and degree of recovery of growth and of accelerated growth at various life stages, and in the final nutritional status in terms of residual stunting, underweight and/or overweight. These factors are likely to be responsible for the observed differences in outcomes across studies. In the case of South and South-East Indians the susceptibility to insulin resistance and cardiovascular risks is even higher than in population from other developing countries. This is explained by their particular malnutrition phenotype, in which low birth weight babies have increased visceral adiposity and insulin resistance even before overweight and obesity can be established based on current Western criteria.

There is good evidence that growth trajectory is relevant in the etiology of later chronic disease. Whether the sequence is underweight-to-overweight or overweight-to-overweight, the consequence of malnutrition in early life is an increased risk of the burden of chronic disease during adolescence and adulthood. This creates a second burden in societies simultaneously disposed to high rates of poor fetal growth, and supports the need to have appropriate definitions of malnutrition and carefully designed research on the life-course consequences of early growth patterns. This research will not only lead to better health and wellbeing but ultimately may halt the progression of the escalating economic costs of malnutrition to beyond a level that society can afford to provide in an equitable manner. Women should start pregnancy with a healthy weight and avoid low or excessive weight gain during pregnancy in order to prevent altered fetal growth that can lead to increased infant mortality and increased susceptibility to weight gain later in life. Intervention strategies to address malnutrition in children should focus on improving linear growth in the first 2-3 years of age and avoiding excessive weight gain relative to height (BMI) after that. In order to do this, energy needs and growth monitoring should be based on normative standards such as the FAO/UNU energy requirements and the new WHO growth standards. Exclusive breast feeding should be promoted as a norm for young infants up to 6 months of age and the micronutrient content of complementary foods improved. Multiple micronutrients (i.e. iron, zinc, vitamin A) should be incorporated into the foods provided by governmental programs for infants and young children while preschool and school feeding programs should ensure and encourage fruits and vegetables consumption and adequate physical activity

Policies in support of the right to Food (adequate in quantity and quality)

A healthy diet can be attained in more than one way, given the variety of foods that can be combined. In practice, the set of food combinations that are compatible with nutritional adequacy is restricted by the level of food production that is sustainable in a given ecological and population setting. In most countries this restriction has been overcome, since imported food can provide for a stable food supply independent of local food production. Of greater significance are the economic constraints that limit food supply at the household level; these are frequently the true underlying causes of

nutritional deficiencies. Urbanization is often associated with the abandonment of traditional diets and their replacement with an urban dietary culture. The rural diet, based largely on vegetable products with small quantities of foods of animal origin, stands in contrast to the typical western urban diet due to the different quantity and quality of fat that it contains, the virtual absence of sugar or other refined carbohydrates except honey or dried fruits, and its higher fiber content. Populations in impoverished countries often consume a monotonous diet out of need rather than choice, as their access to different foods is curtailed by economic factors. Most staple foods such as rice, wheat and corn have low income elasticity, meaning that even if income increases greatly, the increase in the amount of staple foods eaten will be small. However, meat and other animal food products have high income elasticity, meaning that there is a large effect of income on consumption patterns. This is illustrated by the fact that the amount of animal protein foods consumed by the wealthiest 20% of the world's population is four times greater than that consumed by the poorest 20%; while for cereal intakes, the differences are negligible. Food security not only implies ensuring food quantity but also food quality, in terms of micronutrients and type of fats.

Conclusions

Agricultural and food security policies and programs targeted appropriately to meet the needs of poor people can serve to address not only income generation, but also contribute towards food and dietary diversification. There is now a great need and opportunity to focus on food production and its associated supply chains to achieve diets that will support lifelong health, and are both calorie-adequate and of sufficient quality to meet micro-nutrient requirements. We have a good understanding of dietary requirements, and given the variety of foods that can be combined, a healthy diet can be attained in many ways. Dietary diversification away from current energy-dense, nutrient poor diets is possible, only if we are to overcome economic constraints on food consumption. What is the best way to achieve this? Is it possible to influence the supply and price of foods by agricultural and trade policies in support of healthier diets? Major research initiatives are underway to incorporate micronutrients like iron, zinc and vitamin A into staple cereals. Biotechnology has enormous potential to accelerate this breeding effort, but faces criticism where this may involve transgenic modification of crops. Which of these different approaches will be more successful under what circumstances? Who precisely will benefit from them - in this landscape of public and private and low- and high-tech options, what is the emerging political scenario that will define the choices made? Addressing malnutrition in all its forms requires active and coordinated participation beyond health and agriculture; the contribution of education, transport, commerce as well as private non-governmental sectors are required to achieve this goal. Low and middle income countries facing the initial stages of the nutrition transition have the unique opportunity of preventing the epidemic of obesity and related chronic diseases before it scales-up to the levels of industrialized countries. Investing in nutrition reduces health care costs, improves productivity and economic growth and promotes education, intellectual capacity and social development for present and future generations. It is also increasingly recognized that under and over nutrition are not opposite but rather intertwined problems often rooted in poverty and therefore have to be tackled in an integrated way with a single agenda and a life course perspective.

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Cristina Grandi
AIAB Board Member - IFOAM Liaison Officer to FAO and IFAD
AIAB - Italian Organic Farming Organization;
IFOAM - International Federation of Organic Agriculture Movements

Cristina Grandi was born in Buenos Aires Argentina, where she graduated from the University with a degree in Agronomy. Whilst at University she became aware of the social conditions of small farmers and of agricultural labourers, and also of the environmental damage caused by the fertilisers and pesticides which were being promoted at that time by the so-called 'Green Revolution.' With this awareness, she became an activist in support of a model of environmentally and socially sustainable agriculture. In 1974, she taught at the Lomas de Zamora University in Argentina, in collaboration with one of the first departments to work on the social, economic and environmental questions of agricultural production in an integrated manner.

Early in 1980 she migrated to Italy where, working with Italian ecologists, she took an active role in the referendum campaign to ban the use of pesticides. In 1996, she took a post-graduate course in organic farming, qualifying as inspector for organic agricultural production. In the same year she began to work with AIAB - the Italian Association for Organic Agriculture - becoming in the following years one of their leaders. In 1997, on behalf of the AIAB, she took up the question of the introduction of organic products to school meals programmes, producing a report on the possibility and the economic and operational feasibility of running such a programme in Rome.

In 2000, at Umbertide (Umbria), she organized the "1st International Workshop on Organic School Meals and Local Development," and following this, she wrote the first sets of AIAB guidelines on organic school meals. In 2000 and 2001 she organized a series of initiatives in Rome which led to the local administration adopting an organic school meals programme.

In AIAB she took responsibility for agricultural-environmental education, producing and editing a children's book called "Organic farmers tell their stories"; and organizing a network of educational organic farms, facilitating contact between this network and that of the schools. She launched the campaign "Primavera Bio", now in its eighth annual edition, as an instrument of information and training for a broader audience on agricultural-environmental issues.

Another AIAB portfolio for which she has responsibility is that of the promotion and requalification of organic production within the protected areas (national parks), running various projects at local and national level. At present she is president of the National Board of AIAB. Since 2002 she has also run the IFOAM (International Federation of Organic Agriculture Movements) Liaison Office to FAO (United Nations Agency for Food and Agriculture) and IFAD (International Fund for Agriculture

Development). In this role she has taken part in the most important United Nations (UN) meetings on agriculture, putting forward, on each occasion, the point of view of organic farming; and also organizing parallel events and full-scale conferences in UN venues.

She has written numerous articles in sector reviews, in particular in Bioagricultura and "Ecology and Farming"; and is co-author of the chapter "Organic Agriculture and Genetic Resources for Food and Agriculture" in the book "Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries", published by the FAO in 2002.

Myint Htwe
Director, Programme Management
World Health Organization (WHO)
Regional Office for South-East Asia

Dr. Myint Htwe joined WHO Regional Office for South-East Asia, New Delhi, in August 1994, as Regional Adviser (Research Policy and Cooperation). Since then, he has been serving in WHO Regional Office at various important positions, such as Regional Adviser (Evidence for Health Policy), Coordinator (Regional Director's Office & Liaison with Country Offices) and Chief, Internal Review and Technical Assessment.

In recognition of his strong technical background and excellent managerial capabilities, Dr. Myint Htwe was promoted as Director, Programme Management in February 2006, the position he continues to hold. As Director, Programme Management, he is the Principal Adviser to the Regional Director on policy, technical programmes (Communicable Diseases, Noncommunicable Diseases, Health Systems, Family Health, Research, Immunization, Emergency and Humanitarian Action, Programme Planning, etc.) and management matters and assists the Regional Director in the establishment of an effective framework for regional policy, overall programme formulation and implementation, and high-level managerial functions.

Before joining WHO, Dr. Myint Htwe served in the Ministry of Health, Government of the Union of Myanmar, Yangon, as Chief of International Health Division, Minister's Office, Ministry of Health. He also held various important positions in the Ministry of Health such as Health Systems Research Unit In-charge and Epidemiologist/ Malariologist, Vector-borne Diseases Control Programme, etc.

Dr. Myint Htwe obtained the Medical Degree (M.B.B.S.) from the Institute of Medicine (I), Rangoon in 1973 and Diploma in Preventive and Tropical Medicine from the same Institute in 1979. He obtained Master of Public Health degree from the Institute of Public Health, University of the Philippines Systems, Philippines in 1982 and Doctor of Public Health (Dr. PH) degree from Johns Hopkins University, School of Hygiene and Public Health, Maryland, USA in 1991.

Simon Funge-Smith
Senior Fishery Officer
Food and Agriculture Organization
of the United Nations
Regional Office for Asia and the Pacific

Simon Funge-Smith obtained his first degree at the University of Liverpool (Marine Biology honours) and his PhD from University of Stirling (Tropical aquaculture). His work has subsequently seen him working in the Asia-Pacific region for sixteen years. His career in the region has seen him working in environment and management related aspects of coastal aquaculture in Thailand, extension and development of aquaculture in Lao PDR and a wide variety of consultancies and project related activities in many other countries.

He has spent the last 8 years working as the FAO Regional Officer for aquaculture and fisheries based in the FAO Regional Office for Asia and the Pacific in Bangkok. Simon Funge-Smith coordinates the FAO regional fisheries group, based in the FAO Regional Office for Asia and the Pacific. His expertise covers sustainable development of fisheries and aquaculture, promotion of responsible fisheries, particularly in developing countries; coastal and inland fisheries ecosystem management; fisheries livelihoods.

Mr. Funge-Smith coordinates fisheries related work of FAO in the region and is also responsible for providing technical advice on inland, coastal and offshore fisheries. He is actively involved in a number of FAO projects in Asia, including multi-sectoral management of the Bay of Bengal Large Marine Ecosystem and Regional Small-scale Fisheries Livelihoods project. The group also addresses multidisciplinary issues relating to fisheries interactions with forestry, water management and nutrition.

As part of his duties he is the Secretary of the Asia-Pacific Fishery Commission (APFIC), a regional fishery body that acts as a consultative forum and works in partnership with other regional organizations, arrangements and members on fisheries and aquaculture related issues of regional concern (www.apfic.org). APFIC's role is to advocate fisheries issues in a regional context and to promote responsible management and sustainable use.

Mary R. L’Abbé
Director, Bureau of Nutritional Sciences,
Food Directorate, Health Products
and Food Branch, Health Canada

As Director, Bureau of Nutritional Sciences, Food Directorate, Health Canada, Dr. L’Abbé is responsible for the leadership of Health Canada=s nutrition research, surveillance, scientific evaluation and regulatory programs aimed at the maintenance and improvement of the nutritional quality of the Canadian food supply such as nutrition labelling, food fortification, health claims, etc. Dr. L’Abbé is the Canadian Head of Delegation to the Codex Alimentarius Committee on Nutrition and Foods for Special Dietary Uses and Canadian delegate to the Codex Committee on Food Labelling.

Dr. L’Abbé was co-chair of the Canadian Trans Fat Task Force (2004 - 2006), charged with providing the Minister of Health with concrete recommendations to eliminate or reduce processed trans fats in Canadian foods to the lowest level possible. In June 2006, the Trans Fat Task Force released its report, “*TRANS*forming the Food Supply”, containing recommendations to limit the TFA content of vegetable oils and soft, spreadable margarines to 2% of the total fat content and for all other foods to 5% of the total fat content, including ingredients sold to restaurants. In June 2007, Health Canada announced that it had adopted the recommendations of the Trans Fat Task Force to limit the amount of TFA in foods and committed to monitoring the levels of trans in Canadian foods, before deciding whether to regulate the limits or not. She is leading Health Canada’s program to monitor the progress of industry in reaching these targets through its Trans Fat Monitoring Program, the results which are posted twice yearly on Health Canada’s website. Dr. L’Abbé also served as a member of the PAHO Task Force on Trans Fat in the Americas, held in April of 2007 in Washington, D.C and was a member and vice-chair of the WHO Scientific Update on Trans Fatty Acids, held in Geneva Switzerland, October, 2007.

In 2007 Dr. L’Abbé was named Chairperson of the Canadian Sodium Working Group charged with developing a national strategy for reducing sodium intakes by Canadians. She has also served on or chaired numerous national and international nutrition committees for the Canadian Institutes of Health Research (CIHR), the Natural Sciences & Engineering Research Council (NSERC) of Canada, USDA, and WHO.

Dr. L=Abbé holds a Ph.D. in nutrition from McGill University and continues as an Adjunct Professor in the School of Dietetics and and Human Nutrition. She has authored over 80 peer-reviewed scientific publications and book chapters.

JOSEF SCHMIDHUBER
HEAD,
GLOBAL PERSPECTIVES STUDY UNIT
FAO

Josef Schmidhuber is the Head of FAO's Global Perspective Studies Unit. He holds an MSc in Agricultural Economics and a PhD in Economics from the Technical University of Munich. He started his professional career in 1990 as a consultant with the World Food Council, worked as an Econometrician and Economist with the FAO and as a Senior Economist with the Organization for Economic Co-operation and Development (OECD). Mr.Schmidhuber is member of numerous international taskforces and initiatives, notably a lead author of the fourth assessment report of the International Panel on Climate Change (IPCC) and member of the International Taskforce on Commodity Risk Management.

He is also co-author of "World agriculture: towards 2015/2030", FAO's long-term perspective of global agriculture. His work has been published in several books, peer reviewed articles, or as documents of international organizations such as the OECD, the IPCC and the FAO. His work areas include commodity market analysis and outlook, global food and nutrition issues, bioenergy, trade and climate change.

Kraisid Tontisirin
Emeritus Professor
Faculty of Medicine Ramathibodi Hospital
Mahidol University

KRAISID TONTISIRIN is an Emeritus Professor of Pediatrics, Faculty of Medicine Ramathibodi Hospital and a Senior Advisor of the Institute of Nutrition (INMU), Mahidol University. He is currently, among others a member of the International Award Committee of the Prince Mahidol Award Foundation (PMA), the Chairman of the Evaluation Broad of the Thai Health Promotion Foundation, a member of the National Food Committee attached to the Prime Minister's Office, a member of the Food Standards Committee, Ministry of Agriculture and Cooperatives, and the President and Chairman of the Organizing Committee of the International Congress of Nutrition (ICN 2009) to be held at BITEC, Bangkok 4-9 October 2009.

Prof. Kraisid Tontisirin served as the Director of Food and Nutrition Division, the Food and Agriculture Organization of the United Nations (FAO) in Rome, Italy from 2000-2006, the Director of INMU from 1991 to 1999 and thee Vice President of Mahidol University on Planning and Research from 1987-1991. He had actively involved in planning of the Poverty Alleviation Plan (as a planning member) and Nutrition Plan (as the Chairman of the Committee) and Research (as a member of the National Research Council) in Thailand as well as international activities in nutrition as a temporary consultant to FAO, WHO, UNICEF and the WB before he was appointed to work at FAO.

His education and training included, M.D. with honor from Siriraj Medical Faculty, Mahidol University in 1968, PhD in Nutrition from M.I.T., USA in 1973, training in Pediatric at Vanderbilt University Hospital as Pediatric Intern and at Boston Children Hospital, Harvard University as a Junior Pediatric Resident. His interests relate to nutrition, growth and development; protein, amino acid and energy requirements; complementary feeding of infant and young child, and supplementary feeding for pregnant women; nutrition strategies and planning for alleviation of malnutrition and poverty including community based approaches. His recent involvement and interest include food security, nutrition, food quality and safety. He currently serves as a Temporary Advisor to FAO on Nutrition and WHO on Research, Nutrition and Food Safety.

Prof. Kraisid Tontisirin is the author of numerous books, manuals and research papers published in national and international peer-reviewed journals on nutrient requirements, infant and young child feedings, and nutrition as social indicators, nutrition strategies for alleviation of malnutrition, and approaches to supervision of community health workers. He was honored numerous awards including the Distin-

guished Alumni from Faculty of Science and from Siriraj Medical Faculty, Mahidol University, the Most Distinguished Thai of the Year in 1999 from the Royal Thai Government, Dusadee Mala Kem Silapa Vithaya (the most distinguished medal in recognition of the contribution in art and science for Thailand) from His Majesty the King in 2005, and Breast Feeding Promotion Award from UNICEF and Ministry of Health. Recently, in July 2008, he received Honorary Doctoral Degree (PhD) in Nutrition from Mahidol University.

Ricardo Uauy
President
The International Union of Nutrition Sciences

Ricardo Uauy M.D. Ph.D. received his M.D. degree from the University of Chile 1972, completed training in Pediatrics at Children's Hospital in Boston and Neonatology at Yale Nes-Haven Hospital. In 1977 obtained his Doctoral degree in Nutritional Biochemistry from MIT, board certified in Pediatrics and Neonatal-Perinatal Medicine (USA). He joined the University of Chile, Institute of Nutrition (INTA) in 1977 Associate Professor, 1981 became Professor of Nutrition and Pediatrics. From 1985-1990 was Associate Professor of Nutrition and Pediatrics at the University of Texas Southwestern Medical Center Dallas. He became INTA's Director in 1992, was re-appointed in 1998 completing his mandate in 2002. President of the Chilean Nutrition Society 1983-85; participated as expert in multiple WHO/FAO expert committees; He chaired the WHO/FAO Expert consultation on Nutrition Diet and Chronic Disease 2002 and the Global Strategy WHO in 2004. He chaired the FAO/WHO Expert Consultation on Fats and Fatty Acids in Human Nutrition in 2008. He received the McCollum award of the Smerican Society for Nutrition ASN (USA) 2000 member of the Chilean Academy of Medicine in 2002. In July 2002 he became Professor of Public Health Nutrition at the London School of Hygiene and Tropical Medicine, London University UK. Lawton Chiles International Lecturer Award and PAHO/WHO Abraham Horwitz award for Leadrship in Inter-American Health 2005; in 2006 received the Kellog's International Nutrition Award from the ASN; in 2008 received the Rank Lecture Award from UK Nutrition Society and the British Nutrition Foundation 2008 Prize.

Member of the World Cancer Research Fund Panel and Advisory Group on Nutrition, Diet and Prevention of Cancer 2002-2007 responsible for the II WCRF Report and the WCRF Cancer Prevention Policy Report in 2009. Has contributed over 300 scientific publications on human nutritional needs in health and disease. He has edited eight books. Member of the UN SCN Advisory Group On Nutrition 1995-2000, chair 97-00, chair de SCN WG on nutrition throughout the life course. President International Union of Nutrition Sciences (IUNS) for 2006-10. Main research interests are : Human Nutritional Needs in Health and Disease. Prevention of Functional Decline in Older People. Optimal growth and develoment for life long health. Prevention of Obesity in Children. Omega-3 fatty acids needs, molecular, biochemical and functional aspects.

Parallel Session 3

Global Strategy for Health Diplomacy: A Way Forward for Foreign Policy and Global Health

Health Negotiations and Foreign Policy: Synthesis Paper

Laragh Gollogly

This study describes common issues of - and lessons learnt from - four recent international health negotiations: the revision of the International Health Regulations (2005), the Intergovernmental Working Group on Public Health, Innovation and Intellectual Property, the Framework Convention on Tobacco Control, and the Intergovernmental Meeting on Pandemic Influenza Preparedness: Sharing of influenza viruses and access to vaccine and other benefits. Each of these negotiations differed in ways in which advocacy, diplomacy, evidence and varying degrees of public health grounding interacted with stakeholders in each instance, in the context of prior negotiations elsewhere, the involvement of non-governmental organizations, the presence of a party line, and the use of forum shifting. The implications of these negotiations for ministries of health, ministries of foreign affairs and the World Health Organization. How country and regional consultations are handled, and the time needed to adequately brief delegations. How to ensure the good practices of policy coherence, how to approach new topics in public health, such as climate change, financing for universal coverage, alcohol. The intersection of health sector interests with those of the foreign policy eg security versus sovereignty. The implications for the World Health Organization in hosting an increasing number of such negotiations include considerations of infrastructure, staff profiling, and the ability to generate foresight on issues that need intergovernmental processes, while making full use of alternatives to a formal intergovernmental negotiation outwith the Organization's annual world health assembly.

Pirawat Atsavapranee
First Secretary, Department of
International Organizations
Ministry of Foreign Affairs, Thailand

Pirawat Atsavapranee joined the Ministry of Foreign Affairs of Thailand in 1994 as Third Secretary at the Department of American and South Pacific Affairs, working as a U.S. and Canadian desk officer. Between 2000 and 2001, he served as Second Secretary, in charge of political affairs and information at the Royal Thai Embassy in Colombo, Sri Lanka and then as First Secretary at the Permanent Mission of Thailand to the United Nations in New York, between 2002 and 2004, looking after the Fourth Committee (political), the Fifth Committee (administrative and budgetary) as well as the Security Council. Currently, he is First Secretary of the Department of International Organizations, in charge of narcotic drug and public health issues.

Mr. Atsavapranee obtained a Bachelor of Arts degree in English and German in 1987 from Brown University in the United States of America and a Diplôme d'Études Approfondies in comparative literature from Université de Paris VII in France in 1990. In 1996, he attended a one-year training programme at the Department of Foreign Affairs and Trade of Australia and received a Diploma in International Affairs and Trade from Monash University.

Gustavo Gonzalez Canali
Special Health Adviser
Ministry of Foreign Affairs, France

Dr. Gustavo Gonzalez Canali, Special Health Adviser, Department for Development Policies (DPDEV) at the General Dictetorate for International Cooperation and Development, French Ministry of Foreign and European Affaires.

Dr. Gonzalez Canali has obtained his medical degree in Uruguay and specilaized in Internal Medicine in France. Prior to his appointment as Special Health Adviser for Development Policies, Dr. Gonzalez-Canali served as an adviser to the former French Minister Delegate for Cooperation, Development and Francophony where he was in charge of health, humanitarian aid, relationships with NGOs, as well as bilateral relationships with East and Central African countries. He previously worked as a physician and clinical investigator on AIDS vaccine trials in the Immunology Department of the European Hospital Georges Pompidou in Paris, as well as with the French Agency for AIDS and Hepatitis research and (ANRS). Other key posts have included Medical Director for the Luc Montaigner's Centre in Paris on HIV research and follow-up of HIV infected patients, and Head of the Outpatient Clinic of the Institut Pasteur. He has been an active participant in past GAVI Alliance Board discussions, having represented the Government of France in meetings during 2005 and 2006, and he is currently a Board member of the GAVI Alliance since 2007.

Nick Drager
Director
Department of Ethics, Equity,
Trade and Human Rights
World Health Organization

Nick Drager is currently Director of the Department of Ethics, Equity, Trade and Human Rights at the World Health Organization. His work focuses on current and emerging public health issues related to globalization and health, especially global health diplomacy/governance, foreign policy and international trade and health. The policy related, research and training activities of the work programme he leads are designed to contribute to enabling policy makers and public health practitioners to analyse and act on the broader determinants of health development, to better manage and shape the global and national policy environment for health and to place public health interests higher on the global development agenda to improve health outcomes. Prior to this he was Senior Adviser in the Strategy Unit, Office of the Director-General at WHO.

He has extensive experience working with senior officials in developing countries worldwide and major multilateral and bilateral development agencies in health policy development, health sector analysis, strategic planning and resource mobilization and allocation decisions and in providing advice on health development negotiations and in conflict resolution.

He has deep experience in global health diplomacy and high level negotiations on international health development issues. He represents WHO at international events and conferences, serves as chair, keynote speaker at numerous international conferences; he lectures at Universities in Europe, North America and Asia; and is the author of numerous papers, editorials, and books in the area of global health and development. He has an M.D. from McGill University and a Ph.D. in Economics from Hautes Etudes Internationales, University of Geneva.

Bates Gill
Director
Stockholm International Peace Research Institute

Dr. Bates Gill was appointed by the Swedish government to become the seventh Director of the Stockholm International Peace Research Institute (SIPRI) in March 2007, and he took up these duties in October 2007. Founded in 1966, SIPRI is an independent think-tank with a staff of 55 persons focusing on bettering the conditions for a more stable and secure world through research and analysis on international and regional security, nonproliferation, arms control, peacekeeping and conflict prevention, security sector reform, military spending, arms trade, and defense production. SIPRI was recently named as one of the "Top 30 Go-To Think Tanks" globally by the Foreign Policy Research Institute.

Before joining SIPRI, Dr. Bates Gill held the Freeman Chair in China Studies at the Center for Strategic and International Studies (CSIS) in Washington, D.C from 2002 to 2007. He previously served as a Senior Fellow in Foreign Policy Studies and inaugural Director of the Center for Northeast Asian Policy Studies at the Brookings Institution from 1998 to 2002. He has also directed East Asia programs at the Center for Nonproliferation Studies at the Monterey Institute, Monterey, California and at the Stockholm International Peace Research Institute, and formerly held the Fei Yiming Chair in Comparative Politics at the Johns Hopkins University Center for Chinese and American Studies, Nanjing, China.

Dr. Gill has a long record of research and publication on international and regional security issues, particularly regarding arms control, non-proliferation, peacekeeping and military-technical development, especially with regard to China and Asia. In recent years, his work has broadened to encompass other contemporary security-related trends, including multilateral security organizations, the impact of domestic politics and development on the foreign policies of states, and the nexus of public health and security. This work has resulted in more than 125 publications, including books, monographs, chapters, journal articles, essays, magazine columns and opinion pieces.

He is the author, co-author, or co-editor of six books, including, *Asia's New Multilateralism* (with Michael Green)(Columbia University Press, forthcoming in 2009), *Rising Star: China's New Security Diplomacy* (Brookings, 2007), as well as *China: The Balance Sheet: What the World Needs to Know Now About the Emerging Superpower* (Public Affairs, 2006), *Weathering the Storm: Taiwan, Its Neighbors, and the Asian Financial Crisis* (Brookings, 2000), *Chinese Arms Acquisitions from Abroad* (Oxford,

1994), *Arms Trade Transparency in Southeast Asia* (Oxford, 1996), and *Chinese Arms Transfers* (Praeger, 1991).

He has recently published his work in such journals as *Foreign Affairs, Survival, and National Interest,* and issued opinion pieces in such newspapers as the *International Herald Tribune,* the *Financial Times,* the *New York Times,* the *Washington Post,* the *Washington Times,* and the *Los Angeles Times*. Other recent work has included policy reports on China's expanding role in Africa. His editorial in the *New York Times* in July 2001 and his article in *Foreign Affairs* in March 2002 helped focus the attention of the U.S. policy community on China's looming HIV/AIDS challenge. He followed that work by co-authoring four major monographs reporting on China's progress in addressing its HIV/AIDS epidemic, published with CSIS.

Among his professional affiliations, Dr. Gill serves on boards with the U.S.-China Policy Foundation, the Feris Foundation of America, the Geneva Centre for Security Policy, the Center for Democratic Control of Armed Forces, ISIS-Europe, and the China-Merck AIDS Partnership, and is a member of the Asia Society Policy Advisory Board and the Advisory Board of the Shanghai Institute of International Studies. He is on the Editorial Board of the *Journal of Contemporary China, China Security,* the *China and Eurasia Forum Quarterly,* and the *Hong Kong Journal,* and is a member of the Council on Foreign Relations and the International Institute for Strategic Studies. He has consulted for a number of corporations and government agencies, and has lectured widely and provided U.S. Congressional and other parliamentary testimony on a range of issues related to Asian security.

Dr. Gill received his Ph.D. in Foreign Affairs from the Woodrow Wilson Department of Government and Foreign Affairs, University of Virginia, USA. He has lived more than two years in China and Taiwan, and more than six years in Europe (France, Sweden, Switzerland), and has carried out professional travel to more than 45 countries. Dr. Gill speaks, reads, and writes in Chinese, English, and French. He and his wife of 22 years, Dr. Sarah Palmer, a virologist, live near Sigtuna, Sweden. [12/2008]

Laragh Gollogly
Managing Editor
Bulletin of the World Health Organization

Dr. Laragh Gollogly is currently managing editor of the *Bulletin of the World Health Organization,* in Geneva, Switzerland. She was previously senior editor at the Lancet, a position that she initially held during clinical training at the John Radcliffe Hospital in Oxford. She has a MD from the University of Liège in Belgium, and an MPH from James Cook University, Australia. At the World Health Organization, she divides her time between ad hoc monographs, publishing policy, communications for the cluster of Information, Evidence and Research, and co-chairing WHO's Guideline Review Committee.

Malixole Percy Mahlathi
Deputy Director-General
Health Workforce
Department of Health, South Africa

Professional Education

- Qualified with M.B. Ch.B. at University of Natal Medical School in 1987
- Obtained a certificate for Advanced Management Programme with Manchester Business School through the Foundation for Professional Development
- Qualified with Master of Philosophy (Value Analysis & Policy Formulation) at University of Stellenbosch in 2000
- Currently pursuing Doctor of Philosophy (Development Studies) with University of Fort Hare

Career History

Current Employer: National Department of Health, South Africa

Job Titles:

- Senior Technical Advisor; Office of the Director General - March 2002 to March 2004
- Deputy Director General: Health Workforce & Management Development - April 2004 to date

Early Career

1. Started working in 1988 at McCords Hospital, Durban as a medical intern, then joined King Edward VIII Hospital and worked in the departments of Orthopaedics and Surgery from January 1989 to December 1990
2. In 1991 I worked as a locum tenens in General Practice in Pinetown and moved to work in private practice in Khayelitsha, Cape Town from January 1992 until June 1997
3. I left private practice in July 1997 to work fulltime on establishment of the merger or unification of the country's medical associations to form the SA Medical Association (SAMA)

Organisational Experience

Experience has also been attained through being a member and participating in the following committees and/or organisations:

Early & recent years:

a) Post-Graduate Education and Training Committee of the Department of Health until 2000

b) National Health Research Ethics Committee - National Department of Health

c) Ethics Institute of South Africa (EthicSA) - Served as its chairman from September 2000 to February 2003, currently serving as board member

d) University Council of MEDUNSA - from November 2000 to date, also serving in its Executive Committee and Disciplinary Committees. Currently chairing a subcommittee of Council to develop and oversee a process of transformation at management level

e) Socio-Medical Affairs Committee of the World Medical Association - served from 2000 to 2001

f) Multi-Professional Peer Review Committee of the Forum of Statutory Health Councils - 1998 to 2001

g) Served in the Interim Council for the University of Limpopo - a new institution resulting from the merger of MEDUNSA and University of the North until 2006

h) Medicines Control Council as from 2002 to the end of 2003

i) Health Worker Migration Global Policy Advisory Council from inception to date

Presentations at conferences and major workshops

1. WHO AFRO Leadership development workshop Harare, 1998 {presentation on the Continuing Professional Development System}
2. Canadian Medical Association health Policy Conference in Quebec, 2001 {presentation on Migration of Health Professionals}
3. Education Committee for Foreign Medical Graduates conference in Washington, 2004 {presentation on Migration of Health Professionals}
4. Golden Jubilee Celebrations of the Colleges of Medicine of South Africa, October 2005 {Human Resource Planning for Health in South Africa}
5. SAMA conference on the Future of Medicine, March 2001 {presentation of a paper on Stewardship for Health Care}
6. National Consultative Health Forum in Sandton, Johannesburg May 2006 {presentation on Human Resource Challenges for Health Care}
7. World Medical Association Congress, Edinburgh 2000 {presentation on Managing the Migration of Health Professionals}
8. Health Summit, Mpumalanga in April 2006 {presentation on Strategies to Recruit and Retain Health Professional Skills in the Public Health Sector}

Sigrun Møgedal
Ambassador on HIV/AIDS
and Global Health Initiatives
Ministry of Foreign Affairs, Norway

Dr.Møgedal is Norway's Ambassador on HIV/AIDS and Global Health Initiatives and serves as Special Adviser on Foreign Policy and Global Health. She concentrates her professional and diplomatic engagement in the fields of global health and HIV/AIDS response, partnership development, global and national health architecture and reform.

She is a member of the Board of The Global Fund to fight AIDS, Tuberculosis and Malaria and is Chair of the Board of the Global Health Workforce Alliance. Previous posts internationally include Senior Policy Adviser to the Executive Director of UNAIDS and Founding member of the Board of the Global Forum for Health Research.

She has served two terms as Board member of the Global Alliance for Vaccines and Immunization (GAVI) and as a Board member of UNITAID.

In Norway, she has served as State Secretary for International Development. She has held various committee assignments at the Norwegian Research Council and has served as Director at the Resource Center for Health and Social Development. Dr.Møgedal is a MD specialized in tropical medicine and hygiene and has held a number of positions in health care organisation, management and implementation, with long term service in Nepal 1971-1980.

Inga M. W. Nyhamar
Senior Advisor
Ministry of Foreign Affairs, Norway

Inga M. W. Nyhamar is a senior adviser for foreign policy and global health at the Department of the UN, peace and humanitarian affairs in the Norwegian Ministry of Foreign Affairs, Oslo. She has a varied foreign policy background in the Norwegian Foreign Service, mainly in security politics and bilateral affairs. She served at the Norwegian embassies in Prague and in Washington D.C. in the 1990ies and more recently held the post of Deputy Chief of Mission at the Norwegian Embassy in Tokyo from 2004 to 2008.

Her current responsibilities include organizational matters pertaining to the Foreign Policy and Global Health Initiative, launched by the foreign ministers of Brazil, France, Indonesia, Norway, Senegal, South Africa and Thailand in 2006. The initiative aims to demonstrate and make use of the close links in terms of cause and consequence between global health issues and the broad range of foreign policy issues.

Bounpheng Philavong
Assistant Director and Head of Health and Population Unit Bureau for Resources Development
ASEAN Secretariat

Dr. Bounpheng Philavong was born in Vientiane, Laos. He graduated Medical Faculty from Charles University at Prague, Czech Republic in 1985, and received a Master of Public Health (MPH) in Epidemiology from School of Public Health, University of California at Berkeley, USA in 1992 and a Doctor of Public Health (Dr.PH) in International Health (Disease Control and Prevention) from School of Hygiene and Public Health, The Johns Hopkins University in Baltimore, Maryland, USA in 1998.

During his work at the Ministry of Health in Laos (1985-2004), he was appointed Manager of National Programme on Immunization (1988-1991), Planner and Coordinator of National HIV and AIDS Programme (1998-2001), Deputy Director of Project Coordination Unit (PCU), and Deputy Director of Health System Reform and Malaria Control Project funded by the World Bank, Ministry of Health of Laos (2001-2004). He also gave lectures at School of Medicine, School of Public Health, School of Health Technology and Institute Francophone for Tropical Medicine (in French) in Vientiane in different subjects, including epidemiology, immunization, hygiene, infectious diseases, and HIV and AIDS. He conducted several studies in the area of Immunization and HIV and AIDS and has also extensive experiences in primary health care and health financing.

In June 2004, he joined the ASEAN Secretariat based in Jakarta, Indonesia, and is currently holding the position of Assistant Director and Head of Health and Population Unit, Bureau for Resources Development. He coordinates ASEAN regional cooperation in the areas of health and population, including communicable diseases, emerging infectious diseases, Avian Influenza, Pandemic Preparedness and Response, HIV and AIDS, food safety, pharmaceuticals, and population (children, women, elderly and disability) among others.

Gaudenz Silberschmidt
Head of International Affairs
and Vice-Director
Swiss Federal Office of Public Health

Gaudenz Silberschmidt, M.D., M.A. heads the International Affairs Division of the Swiss Federal Office of Public Health since six years. In 2004 he was promoted to the rank of one of the five Vice Directors of the office, including the heads of Health and Accident Insurance, Public Health, Health Policy and Consumer Protection. Dr. Silberschmidt first studied medicine. During his internship he also worked for 6 months in South India. He graduated as MD from the University of Zurich in 1995 then he worked 3 1/2 years as resident in surgery and internal medicine in smaller Swiss hospitals and took a Diploma Course in Tropical Medicine and Public Health DTMPH at the Swiss Tropical Institute in Basel. He then took up studies in International Relations (economics, law and political science) in St. Gallen and Geneva and graduated in 1999 with a MA(IR). Until joining the Swiss administration in 2003 he directed the international NGO International Society of Doctors for the Environment ISDE. In his current position his primary achievements include the successful chairmanships of the drafting groups for the World Health Assembly Resolutions WHA 58.3 on the Adoption of the International Health Regulations and WHA 59.24 on Public Health, Innovation, Essential Health Research and Intellectual Property Rights: Towards a Global Strategy and Plan of Action. He also initiated the OECD/ WHO review of the Swiss health system, led the elaboration of the Swiss Health Foreign Policy, the negotiation team for the procurement of pre-pandemic vaccine for the Swiss population and is leading the negotiations towards a health agreement between Switzerland and the EU. Dr. Silberschmidt was a member of the bureau of the OECD health committee and is currently member of the Standing Committee of the Regional Committee for Europe of WHO. He recently published in *The Lancet* a proposal to create a committee C of the World Health Assembly to improve coordination in global health governance. During a two months sabbatical in late 2008 he was a visiting Fellow of the Global Health Policy Center of the Center for Strategic and International Studies in Washington DC.

Bjørn Skogmo
Ambassador
Ministry of Foreign Affairs, Norway

Ambassador Bjørn Skogmo is a graduate of the University of Oslo in political science and of Centre Universitaire des Hautes Etudes europeennes in Strasbourg.

He joined the Norwegian foreign service in 1969. He has held a number of key positions in the ministry, including as Head of Secretariat of the Minister of Foreign Affairs, Deputy Head of the Policy Planning Department, Ambassador at the Prime Minister's Office, Ambassador for Peacekeeing Operations,

Director General for Development Planning and Deputy Secretary General (MFA) for Development Cooperation.

He has been posted to Norway's embassy in Ankara and to the Norwegian UN delegation in New York. He has served as Norway's Ambassador and Permanent Representative to the UN offices in Geneva and as Ambassador to France.

Ambassador Skogmo is the author of "UNIFIL: International Peacekeeping in Lebanon 1978-1989" and a number of articles on multilateral issues.

Devi Sridhar
Fellow in Politics, All Souls College
Oxford University

Dr. Devi Sridhar is a Fellow in Politics at All Souls College, Oxford. She also directs the GEG's Global Health Project and is a Senior Research Associate at Oxford's Centre for International Studies. She has worked with a number of UN agencies, civil society organisations and Ministries of Health in emerging and developing countries. Her research focuses on the politics of global health and global health governance.

Dr. Sridhar is the author of 'The Battle Against Hunger: Choice, Circumstance and the World Bank' (Oxford: OUP, September 2008, foreword by Amartya Sen) and editor of 'Inside Organisations: South Asian Case Studies' (New Delhi: Sage, September 2008). She holds a DPhil and MPhil from Oxford and a B.S. from the University of Miami.

Keizo Takemi
Research Fellow
Harvard School of Public Health

Keizo Takemi is a research fellow at the Harvard School of Public Health, a senior fellow at the Japan Center for International Exchange, and concurrently a professor at Tokai University's Research Institute of Science and Technology. Professor Takemi is also the Director of the project on Challenges in Global Health and Japan's Contributions. Until August 2007, he was a member of the House of Councillors of Japan's National Diet, and he served in the Abe Cabinet as Senior Vice Minister for Health, Labour and Welfare from September 2006 to August 2007. An influential voice on foreign affairs in the Liberal Democratic Party, he held a wide range of legislative posts during his 12-year tenure in the Diet, including chairman of the House Standing Committee on Foreign Affairs and Defense.

Senator Takemi is known for his expertise on foreign policy, ODA, human security, and the United Nations system. In 1999, as State Secretary for Foreign Affairs in the Obuchi Cabinet, he led the initiative to establish the UN Trust Fund for Human Security, and in 2006 he was named by Secretary-General Kofi Annan to serve as a member of the High Level Panel on UN System-Wide Coherence in Areas of Development, Humanitarian Assistance, and Environment. His many legislative accomplishments include the 2006 restructuring Japan's ODA system.

He received his undergraduate and graduate degrees from Keio University and, has been a professor at the Tokai University since 1995. He has also been an anchor on CNN Day Watch in Japan and a visiting scholar at the Fairbanks Center for East Asian Research at Harvard University. He appears frequently on TV and radio programs as a commentator on issues ranging from international affairs and to national security policies.

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1974	Keio University, Japan
1976	Keio University, Graduate School of Law, Master in Law, Japan
1976~77	Chinese Language Center, National Normal University, Taiwan
1978, 1992~93	Visiting Scholar, Fairbank Center for East Asian Research, Harvard University, USA
1995~2007	Professor, Strategic Peace & International Affairs Research Institute, Tokai University (currently on sabbatical), Japan
2007~	Professor, Research Institute of Science and Technology, Tokai University
1995~2007	Member, House of councilors, Liberal Democratic Party, Japan
1998~99	State Secretary for Foreign Affairs, Japan
2006~07	Senior Vice Minister of Health, Labour and Welfare, Japan
2007~	Research Fellow, Harvard School of Public Health & Senior Fellow, Japan Center for International Exchange (JCIE)

Parallel Session 4

Urban Development

The concrete road to freedom? Addressing urban health equity through action on the social determinants of health

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'Freedom to live the life one has reason to value.' The Commission on Social Determinants of Health (CSDH) built on Amartya Sen's concept of development as freedom, and put empowerment at the heart of improving health equity: political, material and psychosocial empowerment of individuals, communities and nations. Social conditions that enable material, psychosocial and political empowerment, will, it is hypothesised, lead to improvements in health equity. The poor health of the poor, the social gradient in health within countries, and the health inequities between countries are markers of the violation of freedoms. The CSDH showed how the unequal distribution of power, money, goods, and services has profound impact on the conditions of daily living - people's access to health care, schools, and education, their conditions of work and leisure, their homes, communities, towns, or cities. These factors combined - the social determinants - and their inequitable distribution are, we believe, the determinants of inequities in empowerment, freedom and ultimately health.

Where people live affects their health and chances of leading flourishing lives. Communities and neighbourhoods that ensure access to basic goods, that are socially cohesive, that are designed to promote good physical and psychological well-being and that are protective of the natural environment are essential for health equity. Urban settlements are now the dominant mode of living. Around a billion urban dwellers live in slums. Although qualitatively different in low, middle and high income countries, the

foreseeable trend is for rising inequities across a wide range of social and health dimensions.

A social determinants approach suggests that improving living conditions in such arenas as housing, transport, employment, education, quality of built environment, social support, and health services is central to improving the health of urban populations. While this is not uniquely urban, the approach is transformed when viewed through the characteristics of cities such as size, density and diversity. Action on the social determinants also means a new approach to urbanisation that is not based on an urban-led growth paradigm but one that recognises that meeting the health and social needs of people through place, in different socio-economic and socio-cultural contexts, requires a sustainable development strategy based on balanced rural-urban growth, and participatory governance in cites that ensures their design in such a way that prevents and ameliorates the new urban health risks such as obesity, poor mental health and road traffic injuries, and environmental degradation.

If urbanisation continues unabated along its current path, it will present humanity with social, health and environmental challenges on a scale unprecedented in human history. This paper describes the CSDH recommendations for ways to improve the social distribution of empowerment, freedom and health, particularly among urban dwellers. It also outlines some next action being taken on urban health equity through the Rockefeller Foundation.

Privatization of services: example of privatization of health sector in Egypt Abstract

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Egypt is a low middle income country. The population is about 77 millions, mean expected survival at birth is 69 years for men and 73 years for women. Infant mortality rate is 25.3/1000 life birth and total mortality for children below 5 years is 31/1000. Maternal mortality rate is 74/100000.

Modern medicine started very early in Egypt, as the first modern faculty of medicine was founded in 1827. There is a well developed medical infrastructure that includes 21 faculties of medicine, and ratio of doctors is 1/1000 of the population. There was a boom of building the medical infrastructure in the fifties and sixties of the twentieth century by establishing a hundreds of hospitals and rural units, and 95% of the population have a health unit at a distance of less than 5 kilometers from their household.

Since the adoption of open door policy in the total budget of services including health sector decreased, inflation caused the real wages to decrease markedly, and health services deteriorated in the governmental sector. There has been different studies and projects to privatize health sector funded by USAID, most famously the cost recovery project (1987), and there have been contradicting trends in the development of health sector.

The decisive leap forwards towards privatization came after the signing the health reform project in 1998 between the WB as a representative of the financing institutions including the USAID and EC. It stated that the role of the ministry of health and population (MOHP) and health insurance organization (HIO) should be changed. Both should refrain from providing medical services, letting the private sector be the health care service provider. MOHP should content with policy making, determining quality parameters of health services and monitoring its applications, and offer only compulsory children vaccination and ambulant care for accidents. HIO should be changed to an administrative and financial body, buying services from private service providers.

Implementing these recommendations took three steps:

- Trial to pass a new draft law for health insurance that changes the current social health insurance (covering 52% of the population) into commercial health insurance through changing the current comprehensive health package into a partial one, giving way to private health insurance companies to issue private complementary bills, with 30% increase of the subscription fees. It also adds co-payments on all services (outpatient drugs and investigations and in-hospital services) ranging between 25-33% from the price of the service at time of provision, disabling most of our population (with more than 50% under poverty line) from accessing services.
- Issuing the prime minister decree No 637 in 2007 transferred the ownership of the health insurance assets (hospitals, pharmacies and polyclinics) from the non for profit HIO organization to a new body working for profit, namely the Egyptian holding company for health care.
- Trial to pass a new law for private health insurance companies that puts them under financial and medical supervision, and in return, integrating them in the body of service provision as sole providers of some services at the expense of the current non for profit state and parastatal organizations.

Popular opposition rose against these changes with landmarks on its development is the foundation of the defense committee for people right to health in April 2007 in response to the prime minister decree, and holding two national conference that issued the first and second Egyptian Declaration for People Right to Health. 54 civil society organizations signed the second declaration, including 9 opposition parties and many NGOs, popular movements, and human right and health activist organizations.

Until now, some successes were achieved, namely stopping issuing the new health insurance law, though no radical change was made to the draft with announced intent of the government to pass the law. A lawsuit was filed against implementing the prime minister decree, and a preliminary verdict was won to temporarily suspend its implementation till a final verdict is issued, though the government has appealed against this step.

These changes are taking place while privatization of the health sector is gradually going de facto by administrative changes in both health insurance organization and state and parastatal sector in the following forms:

- increasing contractions of HIO with private sector providers in service provision
- decreasing number of working hospitals in MOHP and HIO and decreasing rate of work per working units through decreasing different obstacles in its way
- changing free services in governmental health sector to paid services and increasing the fees

Yet, still the battle between the pro and anti privatization is taking place, while the balance of power in the coming period between both camps is going to determine the shape of the health sector for long time to come.

Urbanisation and Health: Synthesis Paper

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An increasing proportion of the world's population are living in cities. Urban environments influence population health, directly and indirectly, for good and for ill. Policies guiding the development of cities provide a powerful set of levers for promoting population health. The development of such policies involves intersectoral policy collaboration at all levels, from local to global. What are the policy principles; how to mobilise the necessary resources and whence shall come the drive to implement such policies?.

This paper is a resource for the Urbanisation and Health Session within the Prince Mahidol Awards Conference, January 2009. PMA conferences attract policy makers, academics and civil society representatives; including people whose focus is variously local, national, regional and global. This is a rich mix with great potential for cross-pollination. This paper has been prepared with a view to supporting such dialogue around urbanisation and health.

1. Introduction

The starting point for the development of this paper was a set of three case studies dealing with:

- lead poisoning among children in Managua (taking environmental lead as a case study of environmental pollution generally but also noting the influence of the post-conflict context, see Barten 2009),
- social exclusion in Sub-Saharan Africa and its expression in relation to AIDS/HIV (demonstrating the additional insights regarding AIDS/HIV which emerge from applying the social exclusion lens, see Rispel and Popay 2009) and
- integrated approach to building healthy urban communities in Bangkok (linking participative approaches to healthy urban planning and social marketing campaigns, see Smutharaks 2009).

This synthesis paper locates the specifics of these case studies within a more general framework in which the dynamics of causation and possible policy options are discussed.

This paper is framed around three questions.
- How do urban environments influence population health?
- What are the drivers of urban growth?
- What are the policy principles for building healthy urban environments?

2. How do urban environments influence population health?

The ways in which cities are structured and the ways they operate can create opportunities for, and barriers to, healthy living. They can also create the settings in which some groups have the opportunities and other face the barriers.

In many cases urban populations are healthier than rural populations so it is necessary to understand the factors which promote health as well as those which jeopardise health. However, note also that aggregate statistics obscure wide variations (see Baum 2008, p 342).

Urban environments influence health in many different and interacting ways:
- slums / informal housing;
- participation, exclusion, alienation and powerlessness;
- nutrition and food systems;
- urban planning, transport and physical activity;
- jobs and working conditions;
- environmental pollution;
- education and health literacy;
- access to health care.

Slums, informal housing, shanty towns

UN-HABITAT defines ‘slum’ broadly, as “a wide range of low income settlements and/or poor human living conditions” (UN-Habitat 2003). The KNUS comments that such areas are generally characterised by: buildings of poor quality, overcrowding, inadequate provision for infrastructure and services, relatively low price and insecurity (KNUS 2008). Two thirds of urban residents in Sub-Saharan Africa live in informal settlements (Mercado, Havemann et al. 2007). For many cities and for many people slums are the reality of urbanisation (Vlahov, Freudenberg et al. 2007).

Urban environments do not of themselves create poverty. The concentration of productive enterprises and markets may create the conditions for jobs and wages (World Bank 2008). For many who migrate to the cities because of rural poverty, the cities represent opportunity and hope. However, where those hopes are not fulfilled, and where the wider community does not provide basic infrastructure and services, the concentration of poor people in slums creates new hazards in addition to the burdens of material poverty (Baum 2008, p346).

The burdens of material poverty are familiar and include: inadequate shelter, crowding, malnutrition and lack of access to health care and education. A further set of hazards arise from the concentration of poor people in urban slums (see Vlahov, Freudenberg et al. 2007) and these may include:
- poor drainage, lack of sanitation and polluted water Satterthwaite (2008);
- exposure to communicable disease and environmental pollutants (see Barten 2009);

- exposure to risks of environmental disasters such as fires, mud slides, floods, earthquake damage, etc;
- psycho-social stress associated with insecurity, social exclusion, alienation and powerlessness.

Added to the burdens of material poverty and the hazards of slums are the hazards of work including, for example, the hazards of child labour, manual scavenging and sex work.

Participation and exclusion

Urban environments also shape population health through their impact on human relationships: social, cultural, political and economic. The Social Exclusion Knowledge Network (SEKN) defines 'social exclusion' as a situation where people are subject to unequal power relationships in these four dimensions (SEKN 2008). Rispel and Popay (2009) describe these dimensions in more detail.

This model points to the numerous ways in which social exclusion can impact on health and how urban environments can facilitate inclusion or exclusion. Political exclusion, of undocumented rural immigrants for example, contributes to economic disadvantage where workers' rights and fair terms of employment can be ignored. Political exclusion creates barriers to accessing basic services and the leverage needed to realise basic rights. Urban environments can also contribute to cultural exclusion where ghettos of disadvantage develop and stigma and discrimination contribute to further exclusion. Stigma and ghettoisation mutually reinforce.

Social exclusion damages people's health through both material and psycho-social pathways. The material pathways are reflected in the links between social exclusion and poverty. Understanding the psycho-social pathways is also important. The KNUS (2008) quotes Polit (2005) as speaking about the ways in which 'relative marginality' contributes to the ill-health of oppressed people through chronic stress, depression and feelings of bitterness, hopelessness and desperation. The KNUS (2008) argues that the stresses of poverty, including the psycho-social effects of social exclusion, contribute to poor mental health, substance abuse, self-harm, urban violence and crime.

Communicable disease

Kjellstrom, Friel and colleagues (2007) remind us that one of the most direct links between health and the urban environment has been in the field of communicable disease. Features of the urban environment which are relevant include crowded housing, lack of water for hygiene, lack of drainage and sewerage, lack of insect proofing.

In the case study on social exclusion and AIDS prepared for this conference Rispel and Popay (2009) show how urban poverty and social exclusion interact to widen exposure to AIDS/HIV and to increase the burden.

Other diseases such as tuberculosis, hepatitis C and other sexually transmitted infections also impinge disproportionately on poor urban populations; not directly because of urban design but through the interplay of poverty and social exclusion; influences which are indeed amenable to mitigation through intelligent urban development.

Nutrition and food systems

Food systems constitute an important part of the urban environment and shape diets and nutrition and health. Traditionally the bulk of the food supply for towns and cities comes from their rural hinterland and is seasonal in accordance with local climate and custom. This is under challenge with the increasing significance of global sourcing and global supply under the control of the transnational food corporations. The transnational food companies promote highly processed foods (with additional profit from each step in production) and transportable foods to extend market reach (and hence the preference for energy dense food products) (see Dixon, Omwega et al. 2007 for a more detailed overview). The consequences of these pressures include changing diets leading to increasing prevalence of obesity and diabetes and increasing prevalence of diabetes in the young, including in developing countries (Zimmet, Alberti et al. 2001).

Urban planning and transport

Kjellstrom, Friel and colleagues (2007) argue that the availability of and access to public transport is a key element in improving transport equity and reducing the negative health impacts of a car society. The increasing incidence of road traffic injuries in developing countries threatens the poor as pedestrians and bicyclists more than the rich as drivers and passengers of motor vehicles (KNUS 2008).

Jobs and working conditions

Having a job and an income can be good for health; a rewarding job where you feel you are making a contribution and in which you have some control and are not overly stressed (Karasek and Theorell 1990). However, working environments for the poor and powerless are commonly harmful to health and compound the stresses of the living environments discussed above (Employment Conditions Knowledge Network 2007).

Environmental pollution

Further health hazards facing urban residents stem from air pollution, pollution of the water ways and industrial accidents . The massive petrochemical spill to the Songhua River in Northern China in 2005 poisoned the drinking water of downstream cities. The Bhopal disaster of 1984 may stand as metaphor for industrial pollution. Baum (2008) provides a more extended discussion of these hazards.

Education and health literacy

The concentration of people in cities enables economies of scale in education provision and more extended access to higher levels of education. It may be that girls in particular are able to access education more easily in the cities than in the rural areas.

Nevertheless, in the year 1998 there were 113 million children not attending primary school globally most of whom live in Sub-Saharan Africa and South and West Asia. Girls account for 60% of the children not attending school (UNESCO Institute for

Statistics 2000). Wide income inequalities and social exclusion reproduce educational and health disadvantage.

Educational attainment is associated with better health but the links are complex. There may be a direct relationship as when higher education leads to rapid adoption of healthy behaviours and a more informed and more assertive approach to health care seeking. However, there are other variables (income, social capital, social inclusion) which may affect access to education and health status independently. Commenting on the links between girls' education and child health outcomes John Caldwell (1986) has demonstrated how gender equality and a tradition of popular political participation may contribute independently to both female education and better child health outcomes.

Access to health care

Better access to health care is one factors which helps to explain better health status among urban versus rural populations, although in many settings the financial barriers to access are more significant than the distance and travel barriers. (In China for example, most of the 200 million plus rural immigrants working in the cities do not have access to employment related health insurance because they are not registered as city dwellers.)

The KNUS (2008) has concluded clearly that health equity in urban settings cannot be achieved without access to affordable health care and health promotion activities. The case study developed by Smutharaks (Smutharaks 2009) around various health promotion initiatives in Bangkok points towards some of the key principles which may guide such programs.

The health hazards (and opportunities) of urban environments affect different population groups differently

These various kinds of hazard do not impinge on everyone equally; some are more exposed than others; some are more vulnerable than others. Further, the different kinds of hazards may interact as is shown in the case study presented by Rispel and Popay (2009) where the fact of living with HIV can contribute to social exclusion and the experience of social exclusion (through whatever forces) can render people more vulnerable to HIV.

A more complete analysis of the ways in which urban environments shape people's health chances would explore the exposures and vulnerabilities of different population groups including women, low caste people, disabled people, people of colour, etc. The Women and Gender Equity Knowledge Network (2007) points out how gender intersects with economic inequality, racial or ethnic hierarchy, caste domination, differences based on sexual orientation, and a number of other social markers which are associated with differential exposures, vulnerabilities and exclusions.

In responding to the hazards and opportunities of the urban environment it is necessary to understand how these hazards affect different populations, communities, families and individuals and trace the ways in which the distribution of cultural, economic and political power create different patterns of health and illness.

3. The drivers of urban growth

Urban growth is largely due to net economic migration from rural areas to the cities (reflecting both push and pull factors); in some cases also to various forms of displacement: conflict, dispossession and disaster (Satterthwaite 2008).

Economic opportunities and benefits

Cities offer rural to urban migrants economic opportunities where economic development is taking place. Urbanisation facilitates economic growth through the concentration of production capability and markets. In such circumstances economic growth leads to growth in public revenues and private incomes and these can support the development of urban infrastructure, public services and private consumption (World Bank 2008).

However, many growing cities are in countries which are not experiencing economic growth. The World Bank (2008) argues that economic development is intrinsically uneven and that cities and regions which are not growing economically now must wait but they can be assured that growth will come.

Rural poverty

If economic opportunity is a pull factor in driving rural to urban migration, rural poverty is the push factor. The causes of rural poverty are many, some of which are locally specific and some of which are more general. These more general factors include:

- the destruction of small farmers' livelihoods through the dumping of rich world produce in the urban cities of the South at prices with which local farmers cannot compete;
- the exclusion of third world farm products from developed country markets, including tariffs which deny manufactured foods from developing countries access to rich world markets;
- the domination of global food trade by large transnational corporations (Hawkes 2005), whose monopoly power (in seeds, fertilisers, commodity trading and sales) enables them to cut the margins of small farmers and to force the wider implementation of industrial agriculture;
- the rising place of meat and high energy, manufactured foods in the middle class diet globally, undercutting locally produced cereals, fruit and vegetables.

In so far as the health problems associated with urbanisation are in some degree driven by rural poverty it would make sense to direct some policy attention to the causes of rural poverty.

Displacement

In particular settings urban growth reflects various forms of displacement, variously due to war including ùlow intensity warfareû, communal conflict, the building of large dams (Narmada, Three Gorges), rising sea levels and natural disasters (floods, tsunamis, etc). The case study prepared by Francoise Barten (2009) locates lead

poisoning among slum dwelling children in Managua to the history of low intensity warfare in Nicaragua.

Future influences on urban growth and its impact on health

Prediction is risky in complex systems but three key issues which must be considered in evaluating future policy options are climate change, peak oil and the future trajectory the global economy. As the price of oil goes up (due to peak oil and climate change mitigation policies) the relative prices of globally sourced foods and hinterland sourced foods will progressively change, earlier for some cities than others. This will impact on the push factors associated with rural poverty.

The implications of the current global economic crisis are uncertain. By some accounts the crisis will be short lived and the global economy will be 'saved' with the massive bailouts and spending packages now being put in place and by the momentum of the Chinese domestic economy.

There are alternative accounts (eg, Bello 2006) which suggest that the crisis reflects the build up of imbalances in global production and consumption capacity which have been obscured for the last two decades by debt financed consumption in the US and other OECD economies. According to this story the credit crisis reflects the limits of debt financed consumption and reveals the growing overhang of production capacity globally over consumption capacity which is a consequence of neoliberal globalisation. This story suggests that major structural shifts in the global economy are likely although the direction of such shifts will be fiercely contested.

4. Policy principles to guide healthy urban development

Vision

The KNUS described its vision of a "healthy city" in the following terms:

- a sustainable healthy environment, including pure air, clean drinking water, hygienic waste disposal systems, and access to recreational opportunities;
- suitable, sustainable housing;
- generalized access to nutritious foodstuffs;
- a healthy economy with generalized economic opportunity;
- security from crime, as well as from domestic and civil strife;
- free, quality public education;
- safe modes of transportation;
- an appropriate health care and public health infrastructure (KNUS 2008).

Rights approach

This KNUS vision provides useful technical description of a healthy city but it is important that the technical language does not obscure the urgency of the policy challenge and the ethical imperative:

> *Reducing health inequities is, for the Commission on Social Determinants of Health (hereafter, the Commission), an ethical imperative. Social injustice is killing people on a grand scale. (Commission on Social Determinants of Health 2008)*

The human rights perspective (Committee on Economic Social and Cultural Rights 2000) opens a range of legal strategies in creating healthy cities and brings to the fore the ethical significance of the policy challenge. In a similar vein Peter Townsend (2005) argues that technical prescriptions to overcome poverty need to be framed by an overarching commitment to human rights and the elimination of poverty because it is right.

Resources

In many countries governments do not have the resources to accommodate incoming rural migrants. Indeed it is those countries which are weakest economically where the pressures to leave the land and look for new opportunities in the cities are greatest.

The World Bank argues that economic development is necessarily uneven and that economically stagnant economies must wait their turn.

> *Somewhat unfairly, prosperity does not come to every place at the same time. This is true at all geographic scales, from local to national to global. Cities quickly pull ahead of the countryside. Living standards improve in some provinces while others lag. And some countries grow to riches while others remain poor. (World Bank 2008, page 2)*
>
> *[e]conomic growth is seldom balanced. Efforts to spread it prematurely will jeopardize progress. (World Bank 2008, page 2)*

Not all economists share the Bank's certainty. The 2008 edition of Global Health Watch (2008) offers a thoughtful critique of the prevailing paradigm of neoliberal globalisation. From the perspective of those cities, provinces and countries who are otherwise condemned to wait for their turn there is clearly a case for considering alternatives.

Development assistance

For those regions who must wait for economic development is 'development assistance' the solution? The Knowledge Network for Urban Settings (2008) argues for increased development assistance, linked to novel approaches to global taxation.

> *The combined GDP of the high-income countries is increasing by $1 trillion each year, which means that the $200 billion required for aid is only 20% of the annual wealth increase of the high-income countries. (KNUS 2008)*

The World Bank (2008) is less convinced about the potential of development assistance:

> *Aid will be a small part of the solution. Even in the European Union, with a combined GDP of about ¤8 trillion, annual aid thr ough the structural and cohesion funds will average less than ¤50 billion between 2007 and 2013. Foreign aid is less than 0.5 percent of the gross national income of giving countries, and not even a large fraction of the GDP of countries home to the "bottom billion" who have 12 percent of the world's population, but less than 1 percent of its GDP. (World Bank 2008, page 5)*

Social solidarity

Some middle income countries do have the resources to manage urban growth but not the political consensus. This may be attributed in part to the policy pressures to pursue small government and low taxes.

However, a pre-condition for political commitment is social solidarity and this is also under strain with widening urban income inequalities. In some circumstances the middle class of low and middle income countries may be more interested in cheap food for the urban workers to promote export growth (notwithstanding the impact of low prices on farmers) and low tariffs to reduce the prices of imported goods than funding for basic infrastructure and services for the urban poor (notwithstanding the impact of low tariffs on local employment).

Clearly social solidarity is one of the critical areas where long range policy initiatives could make a big difference; both in terms of the priorities of the middle class of low and middle income countries and in terms of the willingness of the rich world to contribute. Pridmore and colleagues (2007) construct the question of social solidarity and political consensus in terms of social capital.

Reform of global agricultural trade

The push factors deriving from rural poverty could be addressed through reform of the current global trade regime to protect small farmers from dumping; to give them access to developed country markets for their agricultural products; to regulate the operations of the transnational food companies so as to protect the margins of the small farmers; and to encourage greater self-sufficiency in food supplies (at the national and regional levels) rather than a singular focus on production for export. Building a global consensus in support of such policies is an important challenge.

Slum upgrading

Kjellstrom, Friel and colleagues (2007) argue that:

Slum upgrading offers an opportunity for rapid scale-up of concrete action1 in a cost-effective manner. It consists of improving security of tenure (often through regularization of land rights) and improving the basic services provision (e.g., water services, energy for cooking and lighting, storm water drainage systems, and security lighting) and housing, mitigation of environmental hazards, provision of incentives for community management, improving access to health care and education, and enhancement of livelihoods through training and microcredit. Improved water supply should be combined with improved sanitation and a separate toilet in each household to facilitate personal hygiene, particularly for women and girls. [...] When water resources are severely restricted alternatives to water-borne sewerage would be the best solution. Other interventions include clean fuels and efficient stoves, liquid and solid waste management, and improved housing. The cost can be surprisingly low (US $500 per household), if the slum upgrading is carried out with active community participation. Another approach is to build whole new housing areas with all the necessary facilities available from the beginning. If it is done in a

way that takes into account the fears and desires of the poor, as was done in Singapore several decades ago, it can be very successful.

Sheuya and colleagues (2007) report that the per capita cost of slum upgrading is almost twice the cost of providing new affordable housing at the outset. Satterthwaite (2008) argues that slum upgrading needs to be understood not as a one off project but as a continuing task, and not as just focused on slums but applying to the whole city.

Governing capacity

Governing capacity is widely recognised as critical for healthy urban development and for slum upgrading. There are several different dimensions of governing capacity in this context:

- mobilising resources (discussed above);
- effective regulatory frameworks;
- urban development policies;
- effective governance structures;
- institutions of accountability;
- strong civil society; and
- platforms for partnership.

Regulatory framework for urban planning

Urban planning requires regulation as well as resources; including city wide urban plans with legislative authority, a functioning approvals process and meaningful sanctions. Urban plans will determine how different parts of the city are to be used (including where industries may be sited) and impose planning controls on new developments. Legislation will provide for ownership to be recognised in certificates of title and for the regularisation of ownership and tenure for informal settlements.

Institutional structures of government

Policy and regulation assume mature institutions of government at the city level and above: legislation, elected representatives, administrative and technical staff. Such structures require training systems to provide the managers and technicians.
Institutional structures to support accountability and probity

The structures of government matter but the broader set of institutions of accountability and cultural norms will also determine how well the institutions of government work. This wider set of institutions include: parliaments, laws, constitutions, courts, professional bodies, community organisations, lawyers, ombudsmen, watch dogs, a free and independent media. However, there is also a cultural dimension, allied to the idea of social capital, which is about trust, expectations of probity and accountability.

These societal norms are easy to weaken but hard to build. It is critical that the processes of urban development, both policy making and implementation, are managed in ways which build these norms rather than weakening them.

Civil society

Civil society participation is a critical part of the wider governance regime. This means organisations through which the urban poor can articulate their needs and work with government on policy and implementation.

In many settings such community organisations develop de novo in which case their role must be respected and their participation welcomed. In other settings there may be scope for policy makers to extend support for community participation in planning.

The organic base for community organisations may be quite local but their reach can be extended through participation in 'federations of the urban poor' (see Shack/Slum Dwellers International at http://www.sdinet.co.za/).

Platforms for partnerships

Overcoming exclusion, building accountability, building social capital are all necessary parts of healthy urbanisation. Different structures have been developed in many different settings for participatory urban planning where city plans are developed (and implemented) in partnership between city officials and local community organisations.

There have been a several initiatives designed to create cross portfolio platforms for integrated interventions for sustainable development, urban development and health improvement (Healthy Cities, Sustainable Cities, Local Agenda 21 sites, Cities Without Slums). Such initiatives illustrate the principles of community participation and a 'whole of government' approach which need to be realised more widely (Mercado, Havemann et al. 2007). Healthy Cities provides a platform for health advocacy (see Baum 2008, p515 et seq) but cross portfolio collaboration and community participation may be inadequate when policies of small government and low taxation are being implemented at the same time (People's Health Movement, Medact et al. 2008). Local agenda 21s have provided platforms for partnerships between government, civil society and the private sector in consensus building for sustainable cities.

Community participation in governance

It is vital that, in accommodating urban growth and /or managing slum up-grading, the processes of governance and administration are understood as contributing to social inclusion and the building of social capital; not simply addressing material needs.

> *Building trust, social capital, and social cohesion via participatory and empowering processes is critical to creating fairer health opportunities. Emphasis [...] is on the importance of social processes (participation, social capital, social accountability, and social inclusion) to approaches that address social determinants of health. (Kjellstrom, Mercado et al. 2007)*

Mercado, Havemann and colleagues (2007) explain:

> *The urban poor do not wait for governments or organizations to act on their behalf. They have the desire and resourcefulness to find ways to improve their shelters, access running water, produce food, organize child care, educate*

themselves and their children, and protect each other amid extreme poverty. (Mercado, Havemann et al. 2007)

Sheuya and Howden-Chapman and colleagues (2007) present a number of examples of successful local community initiatives that have been set up under national strategies in Tanzania and by Indian women's collectives developing housing and sanitation improvements.

Government authorities need the material resources and the bureaucratic know-how to address the health challenges of urbanisation but they also need the understanding of social inclusion and the skills and strategies to address the material needs in ways which also help to build communities. Global Health Watch (2008) urges respect for local knowledge and a readiness to build on existing and spontaneous initiatives with illustrations from small scale partnerships for water and sanitation.

Technological solutions

There are many applications for technological innovation, calling for research, development and upscaling:

- renewable energy sources,
- energy for cooking and household heating,
- transport innovation,
- air pollution control, and
- dry latrines (Kjellstrom, Mercado et al. 2007).

These (and other similar areas) call for increased investment in research and development in partnership with the communities whose needs they might help to address.

Primary Health Care

The vision of comprehensive primary health care as elaborated at the Alma-Ata Conference in 1978 recognised the 'social determinants' of health and affirmed that PHC practitioners and agencies must work with the communities they serve to identify and address such social determinants.

The case study presented by Barten (2009) at this conference is a story of how, in the context of post-war dislocation primary health care workers were able to work with communities, researchers and government authorities in order to define the problem, to examine the causes of the epidemic and to explore possible action. It is a fine case study of a partnership between the affected communities and the health personnel; addressing the ùsocial determinantsû in the context of the urban dislocation of the time.

The 2008 World Health Report (World Health Organisation 2008) provides a welcome return to a socially oriented construction of primary health care; not to the exclusion of communicable disease control and integrated care of sick children but as an approach to delivering health care in empowering and community-building ways.

Health promotion and social marketing

Building healthy cities calls for coherence between urban development policies and health development policies. This sort of coherence is reflected in the case study presented at this conference by Smutheraks (2009). This case study explores the contribution of two major policy interventions in Thailand: the Thai Health Promotion Fund (mobilising resources for health promotion through sin taxes) and the National Health Act which commits to strengthening community participation in health care and population health development. Smutheraks describes a number of health promotion campaigns using social marketing and community based interventions which have also addressed in various ways the wider cultural and structural determinants of health.

Uncertainty and deep listening

The issues involved in building healthy cities are complex and uncertain. There are many different disciplines which have important contributions to make to finding answers. These disciplines tend to speak unfamiliar languages, like the House of Babel. We need to listen past the languages to the values and commitments. We need to listen through the languages to the theories, concepts and models which shape the other's world view.

Most importantly we need to listen to the lived reality of the people and communities whose needs motivate us; to see them as agents of their own destiny; to see our contribution in the context of a respectful partnership.

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Francoise Barten
Coordinator of Nijmegen Urban Health Group
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Francoise Barten joined the Nijmegen Institute for International Health at Radboud University Nijmegen in 1991 after many years working in Central America, for NGO's and the Ministry of Health (Nicaragua) in deprived communities and in informal urban settlements. Her first degree was Medicine (1981), followed by MSc Epidemiology (CIES Nicaragua 1985), MSc Community Health in Developing Countries (LSH&TM) and a Ph.D. in Urban Environmental Health (University of Nijmegen).

In 1992 she took the initiative with colleagues at Nijmegen University to establish a multidisciplinary Urban Health Group and an international civil society programme on Health and Environment in the Cities in order to strengthen transdisciplinary research capacity on the structural determinants of urban health inequalities for effective public policy.Her interest are in health equity and sustainable development - in particular in systems approaches to address health inequalities in health, resources and power.

Her research focuses on urbanization, informalisation, inequalities, environmental conditions, comprehensive PHC and participatory governance. From 1997 to 2001 she was a leading researcher in a participatory study on Health Systems Development in Central America, "Rescate" aiming at strengthening capacity of civil society organisations in negotiations on health sector reform by systematising PHC experiences. She contributed to the Knowledge Network on Urban Settings (KNUS) of the WHO Commission of the Social Determinants of Health.

She is the coordinator of the courses on Poor Global Health and on Environment and Health in an Urbanizing world within the honoursprogramme at Nijmegen University. During 1995-2004 she acted as co-coordinator of the Fort-salud programme that was developed with the University of San Simon, Cochabamba in order to re-orient health professionals education towards the principles, values and approaches expressed in the Alma Ata Declaration and community health needs.

She was a facilitator to several intersectoral urban health initiatives in low-and middle income countries e.g. the Managua Healthy Municipality Initiative. In 1998 she organised an international conference "Healthy Cities - in North and South" in collaboration with WHO and CSO's and in 2003 an international conference on "Health and Sustainable Development. Experiences at the Local Level" in collaboration with WHO and civil society organisations,

She is author of “Health and Sustainable Development. Challenges at the Local Level” and co-author of “Healthy Cities in Developing Countries: Lessons to be Learned” and has written in the areas of health policy and participation, health and human rights, worker’s and environmental health, municipal health development, and health profession’s education. She is on the editorial board of the journal PoSIbles in Latin America.

Francoise has been involved in many civil society initiatives for health. She has been awarded the title of “profesora honoraria” (member of academic staff) of the School of Public Health of Nicaragua (1993), at the Faculty of Medicine of the Universidad Mayor de San Simon, Cochabamba (2000) and at the Universidad Nacional Autonoma de Nicaragua in Leon, Nicaragua (2005).. She is at present co-chair of the ICSU planning group on Urban Health and Wellbeing (2007 -) that proposes developing a systemic approach to urbanization and health.

Fran Baum
Professor
Flinders University

Fran Baum is Professor of Public Health and the inaugural Director of the Southgate Institute of Health, Society and Equity at Flinders University, Adelaide, Australia. She is the Co-Chair of the Global Steering Council of the People's Health Movement - a global network of health activist (www. phmovement.org) . She has served as a Commissioner for the Commission on the Social Determinants of Health (http:// www.who.int/social_determinants/en/) established by the World Health Organisation in 2005. She is a Fellow of the Australian Academy of Social Science and of the Australian Health Promotion Association. She is also a past National President and Life Member of the Public Health Association of Australia.

Professor Baum is one of Australia's leading researchers on the social and economic determinants of health. In 2008 she was awarded a prestigious Australian Research Council Federation Fellowship which has enabled the establishment of the Southgate Institute focusing on the social determinants of health inequity at Flinders University. She holds a number of other grants from the Australian National Health &Medical Research Council and Australian Research Council which are considering aspects of health inequity including impact of social capital, neighbourhood and work. She is a program leader on the social determinants of health theme for the Co-operative Research Centre on Aboriginal Health. She has an extensive teaching career in public health, including writing a number of distance education courses and designing a doctor of public health course for senior public health professions.

Professor Baum's numerous publications relate to social and economic determinants of health, including Aboriginal people's health, health inequities, research and evaluation in community health and primary health care, theories of health promotion, Healthy Cities, social capital and health promotion, and the political economy of health. Her text book *The New Public Health* (3rd edition published in Jan 2008 Oxford University Press) is widely used as a core public health text.

Sharon Friel
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Dr. Friel is a social and nutritional epidemiologist and has worked in the area of health inequalities and public health nutrition since 1992. Between 2005 and mid 2008 she was the Principal Research Fellow for the World Health Organisation's global Commission on Social Determinants of Health, based at University College London (UCL). She currently has a split post, and is Director of the Global Health Equity Group in the International Institute for Society and Health, University College London and a Fellow at the National Centre for Epidemiology and Population Health (NCEPH), Australian National University, Canberra. She has worked closely with the World Health Organisation and as a consultant to the World Cancer Research Fund. Prior to moving to Australia in 2004, Dr Friel worked for many years as a researcher and lecturer in the Department of Health Promotion, National University of Ireland, Galway.

Dr. Friel's research interests are in global health equity, social determinants of health inequalities, food systems and food security, socio-environmental determinants of non-communicable diseases, urbanisation and health, and more recently health inequalities and climate change. Through UCL, she is the principal investigator on a research grant from the Rockefeller Foundation entitled "Health equity through action on the social determinants in urban environments in low and middle income countries"; convenes the *Healthy Urban Systems* research collaboration between NCEPH and CSIRO Sustainable Ecosystems in Australia and is a senior member of the NCEPH climate change team looking at the effects of long term drought and drying on rural health in Australia and leads the work on food systems, drought and health inequities.

Mohamed Khalil
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Dr. Mohamed Khalil (Egypt) is a Consultant of Cardiology in the Egyptian Health Insurance Organization. Since 1991, he worked as an interventional cardiologist in the Nasr City Health Insurance Hospital in Cairo which is a tertiary health care hospital that is considered the main referral hospital for the health insurance organization. He was the head of Cardiology Department in this hospital between July 2000 and June 2007.

Dr. Khalil has a long sound experience in activism and research work, especially in relation to political, economic and social determinants of health. He is also a founding member of the Association for Health and Envionmental Development (AHED), which is one of the leading civil society organizations in Egypt working in areas of health, environmnet and disability since 1987.

Currently, Dr. Khalil is the leader of the right-to-health campaign in Egypt and the coordinator of the Egyptian Right-to-Health Committee which is a huge platform for civil society organizations working in health development in Egypt.

He has a big number of publications in areas of health policies and health economics and he is one of the authors of the book “Burden of Disease and Injuries in Egypt” that was published in 2004.

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La Trobe University

David Legge is an associate professor in the School of Public Health at La Trobe University in Melbourne where he has been teaching health services management and health policy for the last 13 years. He started his career as an internist but moved into public health through a research interest in quality assurance and quality measurement in internal medicine and a more activist involvement in consumer advocacy. During the 1980s he worked in the Victorian State Health Department undertaking developmental work in community health and community participation in health. He returned to academia in 1990 to undertake research and teaching in health development while based at the National Centre for Epidemiology and Population Health in Canberra.

David has teaching and research interests in the political economy of health, comparative health systems and international health policy. Over the last 12 years he has directed the La Trobe China Health Program which is a research and teaching collaboration with a number of universities in China in the areas of health management and health policy. His research interest here has focused on the complex links between health policy and the political and economic transition which China is going through.

David has been involved in indigenous health in Australia for some time and was a theme leader within the Cooperative Research Centre in Aboriginal Health. The CRC has pioneered new approaches to research with Aboriginal people and research which is linked with implementation. The health disadvantages of colonised and dispossessed indigenous peoples are well known; but what are the policy settings which will support Aboriginal advancement in Australia? Too often the policies of the post-colonial state have helped to reproduce Aboriginal disadvantage.

David has had a long standing interest in comprehensive primary health care and the role primary health care practitioners can play in addressing the social determinants as well as providing health care to individuals and families. How can community health practitioners can address local and immediate health problems in ways which also acknowledge and address the larger structural issues which frame those problems.

David has been involved with the People's Health Movement, globally and in Australia, since its formation in December 2000 in Savar. His main involvement within PHM globally has been with the International People's Health University. This is a short course program for health activists, in particular, people who are working with communities in low and middle income countries to provide primary health care and address the social determinants of health. IPHU courses include topics on health systems, trade and health, globalisation, environment, gender and race, working with communities, the right to health, spririt and meaning and other issues confronting people' s health activists.

Toomas Palu
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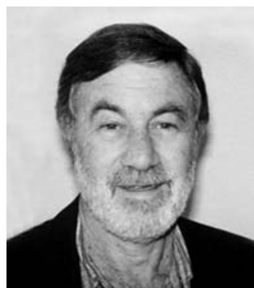
Estonian national and a Lead Health Specialist in the World Bank, is the team leader for the World Bank health programs in Thailand, Cambodia, Laos, Myanmar and Malaysia. In addition to the health team leadership, Toomas is the Country Sector Coordinator for human development sector programs, including health, education and social protection. Previously has led World Bank health programs in several countries in Eastern Europe and former Soviet Union, including Armenia, Estonia, Georgia, Hungary, Latvia, Lithuania, Moldova and Ukraine. Toomas has also advised on health reform issues in China, Russia and Slovakia. He has also served as the Director in the Management Board, Estonia Social Health Insurance Fund and Deputy Director of a tertiary hospital in Estonia. His key qualifications and experience include health policy and health sector reforms in middle-income transition economies and developing countries. Toomas has a Medical Doctor degree from the Tartu University in Estonia and Master of Public Administration degree from the Harvard University in the US. He is married with two children and currently based in the World Bank Cambodia Country Office.



David Sanders
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David Sanders, founding Professor and Director of the School of Public Health at the University of the Western Cape, (U.W.C.), South Africa, is a specialist paediatrician with qualifications in Public Health. David Sanders has over 25 years experience of health policy and program development in Zimbabwe and South Africa, having advised governments as well as OXFAM,WHO,UNICEF and FAO in the areas of primary health care, child health and nutrition, and health human resources. He has published extensively in these fields as well as on the political economy of health, including on structural adjustment and development aid, having authored or co-authored three books: "The Struggle for Health: Medicine and the Politics of Underdevelopment", "Questioning the Solution: the Politics of Primary Health Care and Child Survival" and "Fatal Indifference: the G8, Africa and Global Health", as well as many chapters, monographs and articles in peer-reviewed journals. In 2004/5 he was Heath Clark visiting lecturer at the London School of Hygiene and Tropical Medicine. He has served on the Steering Committee of the United Nations Standing Committee on Nutrition. He was Heath Clark visiting lecturer at the London School of Hygiene and Tropical Medicine in 2004/5 where he was also an Honorary Professor. He is also an Adjunct Professor at the Centre for International Health at the University of Bergen in Norway and was a Visiting Fellow at the Globalization/Management Department, Institute of Population Health, University of Ottawa, Canada in 2005. He is recipient of the Nutrition Society of South Africa award in 2002. He is on the editorial boards of and a regular reviewer of manuscripts for Critical Public Health, the Journal of Epidemiology and Community Health and the International Journal of Integrated Care. He also reviews for the Lancet, British Medical Journal, Bio Med Central Public Health, the American Journal of Public Health, Human Resources for Health and Bulletin of the World Health Organisation. He was a member of the Knowledge Network of the Commission on Social Determinants of Health. He is on the Global Steering Council of the Peoples Health Movement and was a managing editor of the recently published Global Health Watch 2.

Buranaj Smutharaks
Deputy Chairman of the Democrat Party of Thailand's Healthcare Committee

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Dr. Buranaj Smutharaks - Chief Executive Officer of Trinity Assets Co., Ltd, was selected as one of "100 outstanding Southeast Asians who are expected to play key leadership roles in business and government in the first decade of the 21st century" **by Asia- Inc Forum on Leadership 2003,** and profiled as one of the up and coming young leaders of Thailand in the **Far Eastern Economic Review** article titled, **"Young Turks on the Move"** (July 30th, 1998), Dr. Buranaj has held numerous posts within the previous government as Secretary and Senior Policy Advisor to the then Prime Minister Chuan Leekpai during which he was the principal architect of Thailand's Healthcare Reform Initiative and also set up the Health Promotion Fund, mobilizing tobacco and alcohol excise taxes as a means of resource allocation for health.

Dr.Buranaj is also Deputy Chairman of the Democrat Party of Thailand's Healthcare Committee and Member of the party's Restructuring Committee and Policy Committee. Prior to joining the Democrat Party, Dr. Buranaj worked as a Researcher at Chulalongkorn University's College of Public Health, the Harvard University's Center for Healthcare Financing and the Harvard Center for Population and Developmental Studies where he also earned two Post Graduate Degrees in Public Health and Health Policy & Management. Dr. Buranaj graduated from Chulalongkorn University Medical School with the class's highest score in Thoracic Surgery.

He divides his time between reading, music and sports (which includes being in-house wrestling referee for his three sons Edward, 12 and Albert,11 and Arin 7 years).

The Private Health Sector:
Appropriate Policies to
Ensure its Contribution to Achieve
Health Systems Goals
of Efficiency, Equity, Quality and
Affordability

Health Markets and Future Health Systems: Innovation for Equity

Gerald Bloom, Claire Champion, Henry Lucas, M. Hafizur Rahman, Abbas Bhuiya, Oladimeji Oladepo and David Peters

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Introduction

Many low and low-middle income countries have pluralistic health systems, characterized by widespread and often highly segmented markets offering a diverse range of health-related goods and services (Mackintosh and Koivusalo 2005; Bloom and Standing 2001; Berman and Rose 1996). Out-of-pocket payment for healthcare averages over 50 percent of all health spending in these countries (WHO 2008), with non-state providers, both private and not-for profit, typically providing the majority of outpatient curative care (Hanson and Berman 1998; Peters et al 2004). If health services are to benefit the poor, it is essential to gain a detailed understanding of such markets that can both inform attitudes towards them and guide innovations that attempt to engage with them to improve health outcomes.

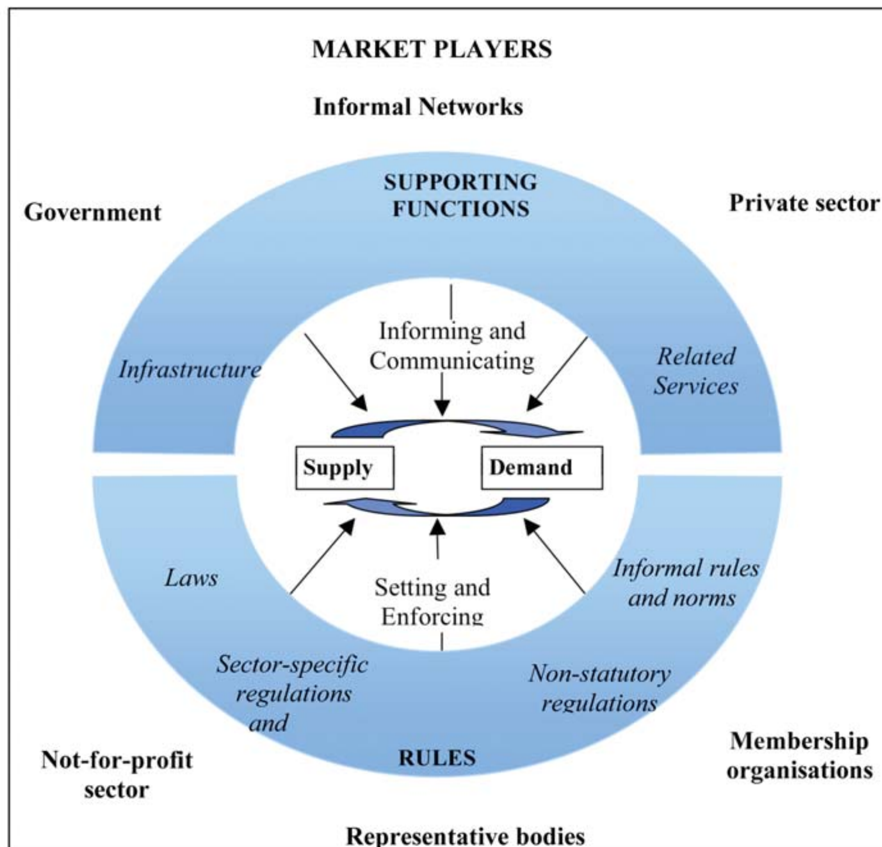
The spread of market relationships in the provision of health services has coincided with the growth of markets in other sectors. In some countries this has been associated with economic liberalisation and economic growth. In others, its emergence is linked to economic decline and the failure of state-provided services to meet popular expectations. In many circumstances the spread of markets has been much faster than the capacity of the state and other key actors to establish regulatory arrangements to influence their performance. A large proportion of market transactions now take place outside a legal regulatory framework or in settings where regulatory regimes are poorly implemented, particularly for the poor. In addition, the boundaries between public and private sectors have become blurred. In many countries users routinely make informal payments for services or drugs at public facilities, or consult government health workers privately (Das Gupta et al 2004). In others, public providers

are officially encouraged to generate income in order to supplement often very limited government subsidies (Bloom, Kanjilal and Peters, 2008).

The marketization of health services has created both opportunities and challenges for poor people. They may have greater choice about where to seek drugs and medical advice, but cost is often a barrier to access. There are examples of excellent services but, as Das et al (2008) document, the quality of services that both public and private health workers provide is often flawed, partly in response to perverse incentives. Such incentives also result in an emphasis on medical care at the expense of prevention and health promotion. It is widely recognized that both government and other intermediary organizations can play important roles in altering these incentives and improving the performance of these markets. There is less agreement on what those roles should be in different development contexts and how health systems can construct the institutional arrangements for them to play these roles effectively.

The spread of market relationships has advanced so far in many countries that official policies often have limited relevance to the realities that poor people face when coping with health problems. We propose an approach which explores the operation of health markets in order to help explain how health systems are changing, identify potential opportunities for intervention and innovation, and guide the design of monitoring systems that can track and learn from both the intended and unintended consequences of such innovations. We then examine different types of emerging innovations, and focus on two in Nigeria and Bangladesh.

Figure 1: Conceptualizing market systems



Source: Adapted from Elliot et al (2008)

Conceptual Framework

This section describes an approach for analyzing and understanding health markets in low and middle income countries. It draws on the framework for understanding markets that poor people use presented in a recent paper by Elliot et al (2008) and summarized in figure 1. The authors of that paper place at the center the relationship between providers and consumers, i.e. in our case, the relationship between health service providers and patients. Those relationships are greatly influenced by a multi-dimensional and complex environment made of formal and informal rules and of agencies that undertake a number of supporting functions. Strategies for change need to take into account the diverse components of this context as well as ways to improve the management of a single organization or intervention. They also need to acknowledge the importance of conflicts of interest and the degree to which power relationships influence the organization and functioning of relevant markets. For example, many health-related markets are segmented, with well-regulated components used mostly by the better off and unregulated ones used by the poor (Bloom 2001).

An important aspect of the relationship between providers and patients concerns the transfer of the benefits of medical expert knowledge to the latter. This transaction is characterized by varying degrees of asymmetry of information and a consequent imbalance in power, which possessors of expertise can use to their advantage. Societies have evolved mechanisms to address this problem through a combination of regulation by the state, different forms of self-regulation and organizations that build and maintain a reputation for competent and ethical behavior. The relevant actors include the regulatory arms of central and local government, professional and trade associations, large service provision organizations and a variety of civil society organizations and consumer associations.

Current rules and regulations often do not take into account the importance and diversity of health markets in developing countries, and thus many actors operate outside a legal framework. Barriers to appropriate regulations are often linked to a lack of government capacity to enforce them or incentives to do so (Ensor and Weinzierl 2006). Many government regulatory agencies focus on the services used by the better off and shy away from attempts to regulate the informal sector which is of paramount importance for the poor. This has led to the emergence of a variety of partnerships between governments and other actors to co-produce rules and improve market performance (Joshi 2004; Peters and Muraleedharan 2008).

Where regulation is limited and information asymmetries are large, trust is a key dimension in the relationships between providers and consumers. Patients in low and middle income countries have shown a willingness to pay more for the services of providers whose competence they trust and many providers have adopted strategies to build and maintain a reputation for high expertise and ethics (Montagu 2002&2003; Mills et al 2002; Prata et al 2005). Trust and reputation may be based on a variety of factors including directly experienced quality of services (e.g. availability of drugs, cleanliness, courteous staff), perceived status of providers (e.g. professional title, advertised qualifications and experience) and brand recognition (e.g. widely known franchise, accreditation or licensing authority). Less formal arrangements are often important at the community level, where providers operate within local trust networks. Word of mouth is an important medium for the establishment and maintenance of a facility's reputation (Leonard 2007).

Another important aspect of the performance of health-related markets relates to information flows. Providers and users of health services get information from many sources. In Bangladesh, for example, the primary source of information for informal providers is from sales representatives or wholesalers who are associated with generic manufacturers. Other sources include the diverse communications media that national and international advocacy groups, government agencies and commercial advertising agencies increasingly use to deliver messages to both providers and the general population. New communication tools, such as mobile telephones and the internet, are significantly increasing the options and capacity for information dissemination, even in some of the poorest countries. This increasing volume of circulating information creates an urgent need for trusted knowledge brokers.

Health Market Innovations in Developing Countries

Innovations aimed at improving health services have taken place in both informal and formal sectors. Those happening in organized markets have taken various forms, ranging from commercial models (mostly found in Asia and Latin America) to highly subsidized but market-oriented interventions such as the establishment of provider networks, social franchises or accreditation schemes (mainly run by NGOs or faith-based organizations).

Notwithstanding the innovations described above, many health transactions involving poor people still take place in the informal sector, where there are minimal quality standards and no reporting requirements. To examine ways of addressing these constraints, two initiatives that involve partnerships between informal providers, policy-makers and the public to shape better health markets for the poor are discussed below.

In Bangladesh, informal providers (village doctors, medicine vendors) are the major source of health care for rural people. A recent formative study conducted in one southeastern sub-district (560, 000 people) of Bangladesh by ICDDR,B found that 96% of health care providers were informal including village doctors, traditional healers (Kabiraj), traditional birth attendants and spiritual healers. The study found many instances of inappropriate and even dangerous prescribing. The consortium has launched a three-pronged intervention of training informal providers, establishing an association of these providers to implement a degree of quality control and the involvement of the Bangladesh Health Watch in monitoring the performance of informal providers.

In Nigeria where malaria is a major cause of illness and death, most people depend on patent medicine vendors (PMVs) as a source of anti-malarial medication. PMVs operate in poorly markets. A scoping study by the School of Public Health at Ibadan University found that PMVs were the major source of malaria treatment (39%) followed by self-treatment (26%), (Oladepo et al 2008). It also indicated that PMVs often recommend inappropriate products that are inexpensive but also ineffective. In this complex and unregulated market environment, local PMV associations were identified as institutions with the potential to play an important role in providing information, influencing PMV behavior, and procuring drugs. Also, a large proportion of PMVs (92%) said that community involvement in drug regulation would be highly desirable to complement the relatively weak government system. For example, they

could use relatively inexpensive equipment to test the efficacy of anti-malarial drugs. Recent consultations with stakeholders found overwhelming support for an intervention that would involve a partnership between public and private sectors.

Conclusions

Given the pervasiveness of markets for health-related goods and services and the great degree to which the poor obtain medical care in these markets, it is time for health policy-makers to take action to improve their performance, based on a systematic understanding of how these markets operate. In doing so, they need to take account of the following:

- Attempts to achieve long-lasting change through the efforts of a single organization or a particularly innovative individual tend to be unsuccessful; it is important to understand and address market systems, as a whole, in order to achieve sustainable change.
- Reforms should begin with markets in which poor people are already engaged and will often involve informal providers, who operate outside formal legal and regulatory frameworks, and local agencies such as provider associations, citizen groups and local accountability structures.
- Interventions intended to benefit the poor need to acknowledge and take into account the influence of power and conflicts of interest on their outcome and this should be anticipated in a detailed stakeholder analysis.
- Interventions that focus solely on providers of health services are unlikely to have a great impact on the poor unless they are linked to measures that provide more equitable access to government funding and donor financial flows.

Acknowledgement

This paper is an output of the DFID-funded Future Health Systems Consortium {http://www.futurehealthsystems.org/}. The opinions expressed do not necessarily reflect the views of DFID. It also draws on a soon-to-be published background paper for an initiative of the Rockefeller Foundation on the role of the private sector in health systems. This initiative applies a broad health systems lens and is undertaking exploratory work in three broad areas: attitudes of key stakeholders, analysis of five functional areas (risk-sharing, regulation, logistics, contracting and provider performance) and identification of country level programs and organizations that show a strong potential for replication and/or scaling up. It is expected that the Rockefeller Foundation and additional partners will launch a program in the near future.

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Findings from a landscape analysis of global players' attitudes toward the private sector in health systems Summary Report

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Introduction

There is a growing body of evidence that suggests that the private sector could play an important role in financing and providing health services in low- and lower middle-income countries.[i,ii,iii,iv] This recognition has led to several international fora and working groups that focus on how the private sector can become more involved in health systems. In such settings, some participants assert that negative attitudes toward the private sector are a barrier to expanding collaboration between the public and private sectors.[v] Our study sought to explore these attitudes toward the private sector and their impact on public-private collaboration.

We first conducted a literature review to explore the existing literature on attitudes toward the private sector in low- and middle-income countries. The literature review yielded a limited number of research articles that examined attitudes or perceptions toward the private sector. These articles are limited in scope, often focusing on specific countries or specific disease interventions. Several studies from Bangladesh, India, and Uganda, however, found evidence of mistrust between the public and private sectors.[vi,vii,viii] We then assessed global and national stakeholders' attitudes toward the private sector in low- and lower-middle-income countries, with a focus on health service provision and financing for the poor, using a questionnaire survey and interviews with key informants.

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Methods

The research employed qualitative and quantitative research methods to gather data on attitudes toward the private sector. The qualitative research involved a total of 57 in-depth interviews with respondents at the global and national levels. The national-level interviews were conducted in three countries: Pakistan, Thailand, and Zambia. The quantitative research involved an online survey conducted in collaboration with the Global Health Council. In total, 1,201 survey responses were received, of which 469 were eligible for analysis.

Key findings

Seven themes emerged through analysis of both qualitative and quantitative data:

Theme 1. There was no agreement about what the "private sector" or a "public-private partnership" was.

Theme 2. Most respondents gave qualified responses in their views of the private sector, although their perceptions varied depending on their personal ideology and history, type of intervention, area of focus, and country context.

Theme 3. Negative views-although in the minority-were deeply rooted.

Theme 4. The public sector viewed the private sector as a means to an end.

Theme 5. At the national level, the private sector feared government interference, while the public sector feared a loss of control.

Theme 6. There was significant experience with many different forms and models of public-private interaction.

Theme 7. The evidence base on private-sector involvement was not seen as sufficient.

Trade and health-the role and impact of the private sector

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ABSTRACT

The private sector. through international trade, is involved in every area of life, and hence the determinants of health; including food production and distribution, water supplies, power generation and, more recently, health-related goods and services. In this latter respect - international trade in health-related goods and services - domestic health systems in the 21st century will become increasingly influenced by the private sector, requiring those involved in health system analysis and policy to have a more sophisticated understanding of the role and impact this involvement may have.

For example, the private sector plays a major role in the research and development of innovative medical and health products, yet the current systems in place to support this create problems of affordability to many of those in need of them. Similarly, private investment may increase the supply of health services in many countries, but also result in a 'brain drain' of well-trained professionals from the public to higher paying private sector, leaving the public sector short of skilled human resources. The expansion of private sector involvement through trade, and the concerns that accompany this, mean that it is imperative to analyze these developments such that policies may be developed to ensure that associated risks are minimized and opportunities maximised.

This presentation will outline current trends in the magnitude, pattern and main contributors to international trade concerning the crititcal areas of pharmaceuticals, and especially the impact of the World Trade Organization's Agreement on Trade-Related Aspects of Intellectual Property Rights, and health services, covering e-health, health tourism, health worker migration and foreign investment in health facilities. Key issues arising in each case will be discussed and recommendations suggested. The presentation will be based on three papers that will be published in a Lancet Special Issue on Trade in Health, to be launched on the 21st January 2009, where more information may be found.

An assessment of performance of health regulation in low- and lower middle-income countries

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Executive Summary

The significant role of health service provision by private health sector in developing countries especially among the poor rural population has been documented extensively. However, there is a policy need to understand the government capacity to regulate and steer the orientation of the private health sector to contribute to the health systems goals of efficiency, equity and quality of care.

This study fills the gap of understanding on the government institutional capacity of health regulation, by focusing low-income (LIC) and lower-middle income (MIC-L) countries on comprehensive dimensions of regulatory tools and mechanisms in order to recommend policy actions to strengthen regulatory capacity.

A global, self-administered, questionnaire survey was launched to 105 LIC and MIC-L during June to September 2008. One key informant, in consultation with other key stakeholders who are responsible for health regulation, will represent the country in responding the questionnaire. Of this total, 17 LIC and 15 MIC-L, a total of 32 countries, submitted complete questionnaire by the closing date, representing 30.5% response rate.

Result reveals a wide variation in political, administrative, and information constraints; policy concerns and priorities; and institutional capacities in health regulation across these countries. Key regulators in LIC faced more political constraint in regulating health sector than their counterparts in MIC-L, especially on health facility accreditation and health professional councils. The administrative constraint in these resource-poor settings is even more intense, whereby the information constraint to most regulators (except for non-government/civil society organizations as a watch dog on health consumer protection) has not yet been fully realized as major problems.

For regulatory measures, majority of the respondents in LIC and MIC-L gave a high level of policy concern, that they have weaknesses in licensing health practitioners and in registration of health facilities. Not many countries rated empowering health consumers as their high policy concern. Less than half of the respondents reported a relatively strong institutional capacity in regulation implementation, especially controls of health service price (which is positively correlated with the national income level) and distribution of health practitioners in LIC and the consumer empowerment in MIC-L.

Price is not easily regulated through a direct command-and-control manner. This requires the role of financing agencies or other purchasing mechanism to better regulate. However, insurance has been less developed in poorer countries or social health insurance only covers a small fraction of population. In addition, the capacity to set rules was perceived as stronger than the capacity to enforce compliance and monitor regulatory performance. This means rule and regulation are well in place, but the capacity to enforce these rules and regulations and to generate evidence through monitoring to facilitate the enforcement requires significant improvements.

On what potential services to engage more the role of private health sector and whether regulation capacities are well in place, most LIC gave a relatively high priority in engaging private sector on social marketing of insecticide-treated bed nets (for malaria preventions) and tertiary care curative services; whereas ambulatory services received a low priority. Most MIC-L placed high priority to engage private sector in

providing pharmaceutical service in rural area and the social marketing of family planning services. The weakest institutional capacity in the LIC is the regulation of social marketing for family planning services and the pharmaceutical service in rural area.

The result from this country self-assessment reflects an overall country weakness in its institutional capacity to regulate health sector and furnishes evidence for national actors in LIC and MIC-L and global health partners to identify the root causes of these institutional weaknesses and to boost their stewardship functions as a key foundation to better engage private health sector. In particular, the year 2008 is the midway towards the achievement of Millennium Development Goals, the private health sector may have some contributions if appropriately oriented and steered. A forum for dialogue in order to build trust between the government and private health sector is an essential platform to foster the appropriate role of private sector, while minimize and prevent negative impacts on public health sector.

1. Introduction

This paper presents results from a global survey conducted during June-September 2008 by International Health Policy Program (IHPP), Ministry of Public Health, Thailand to assess the institutional capacity and performance of low-income (LIC) and lower middle-income (MIC-L) countries in regulating health sector.

Finding from the survey is to inform national policy makers and global health partners how best the private health sector can engage in health systems and contribute to the societal goals of efficiency, equity, and responsiveness. Figure 1 illustrates a conceptual framework guiding the questionnaire development and following analysis.

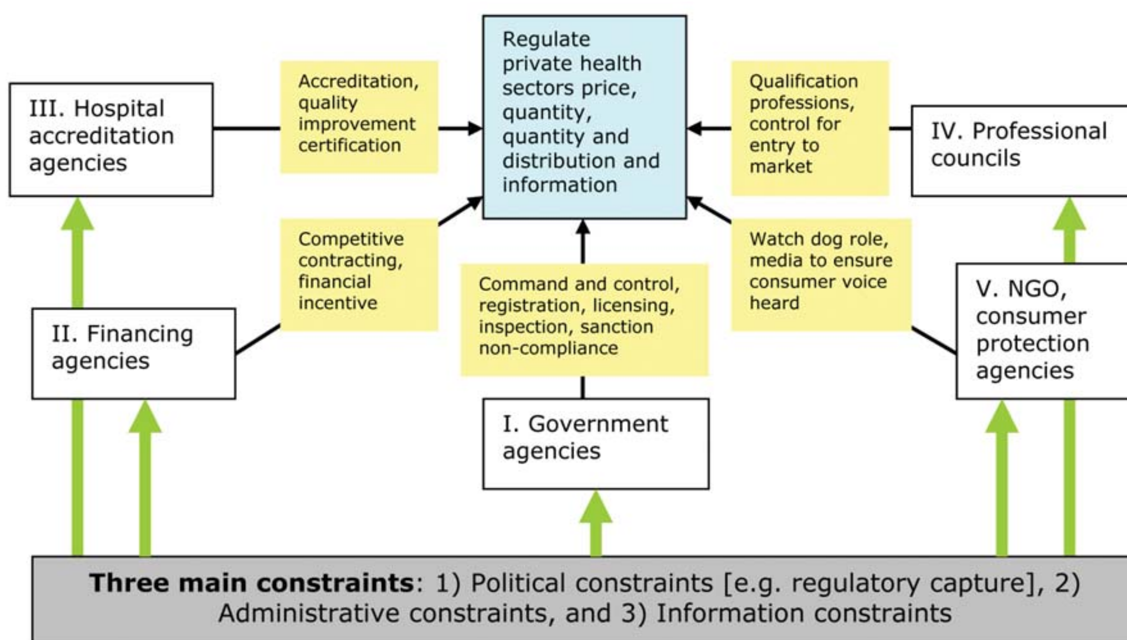

Figure 1 Five key regulators and their regulatory measures operated under three main constraints

Figure 1 depicts five key stakeholders of health regulation in a country. They are

1. regulatory government agencies to command and control, and provide effective inspection, registration and licensing;
2. financing and health insurance organizations through appropriate health financing strategies;
3. hospital accreditation agencies through accreditation and quality certification;
4. professional councils in control of quality and ethical conduct of health professionals;
5. NGO and consumer protection agencies in watchdog roles and improving consumer's voices.

These regulators applied various instruments mandated to them, for example competitive contracting and financial incentives applied by financing agencies in order to regulate price, quantity, quantity and distribution and information. However, in reality, these five regulators are facing three major constraints classified as (1) politic, (2) administration, and (3) information, when applying various regulatory measures.

With an increasing role of private sector in service provision, there is an urgent need to better understand the government regulatory capacity prior to engaging the private sector to achieve the health systems goals.

This study focuses on LIC and MIC-L in five world regions[1] as classified by the World Bank's World Development Indicators. Reviews of the European Observatory's various country profiles indicate that high-income (HIC) and upper middle-income (MIC-U) countries have a strong government institutional capacity in regulating private sector and there is high influence of financing agencies in regulating public and private providers while almost all countries in this HIC/MIC-U group achieved universal health care coverage.

A self-administered questionnaire survey is applied to solicit information on country's regulatory performance (in terms of strengths, weaknesses and concerns of stakeholders in regulating public and private health sectors) from the most knowledgeable key informants in each country. The key informants are identified through various mechanisms. The regional advisor on health systems development in the WHO Regional Offices advised names of these key informants for researchers to directly communicate with them.

2. Objectives

1. To assess the current institutional capacity, their strengths and weaknesses of the key regulators in regulating public and private health sectors
2. To identify priority areas for an increased role of private health sector in improving health of the people, the current regulatory capacity for these services

3. Results

Questionnaires were launched through email communications to the key informants in 64 LIC and 41 MIC-L (a total of 105) that are the targets of this survey in five regions. Thirty-two countries completed and returned the self-administered questionnaires, contributing to an overall response rate of 30.5%.

For most regions, key informants in LIC completed the survey questionnaires in a relatively lower proportion (27%) than in MIC-L (37%). The low response in resource-poor countries probably reflects limited availability of, or difficulty in access to the country's information on health regulation, or both.

On average, the survey-responding countries are relatively poorer (per capita GNI, USD 641 and 2,750 for LIC and MIC-L, respectively) and have lower spending on health in both per capita term (USD 26 and 163 per capita for LIC and MIC-L, respectively) and total health expenditure as percent country's GDP (4.6% and 6.3% for LIC and MIC-L, respectively) when compared with the rest in the same income groups (Table 1).

[1] Latin America and the Caribbean (LAC) region with 2 LIC, 16 MIC-L, and 14 MIC-U was not included in this survey

Table 1 Country's economic, total health expenditure and governance profiles (mean + SD)

	LIC		MIC-L	
	All countries [a] (N=64)	Respondents (N=17)	All countries [a] (N=41)	Respondents (N=15)
GNI per capita (USD), 2006	801.2 ± 1,101.8	640.6 ± 274.8	2,861.2 ± 1,212.4	2,750.0 ± 927.5
Total health expenditure (THE) per capita (USD), 2005	31.8 ± 32.9	25.7 ± 13.1	183.2 ± 115.4	163.0 ± 85.2
THE as % of GDP, 2005	5.0 ± 2.2	4.6 ± 1.8	6.9 ± 3.1	6.3 ± 2.8
Worldwide Governance Indicators 2007 (WGI)b				
- Voice and accountability	-0.74 ± 0.71	-0.58 ± 0.74	-0.37 ± 0.93	-0.31 ± 0.78
- Political stability	-0.75 ± 0.89	-0.70 ± 1.18	-0.17 ± 0.99	-0.12 ± 0.78
- Regulatory quality	-0.84 ± 0.61	-0.83 ± 0.62	-0.45 ± 0.63	-0.14 ± 0.45
- Rule of law	-0.89 ± 0.51	-0.86 ± 0.65	-0.23 ± 0.64	-0.05 ± 0.47
- Government effectiveness	-0.88 ± 0.50	-0.86 ± 0.57	-0.39 ± 0.53	-0.16 ± 0.43
- Control of corruption	-0.81 ± 0.43	-0.75 ± 0.56	-0.41 ± 0.45	-0.24 ± 0.50

[a] Countries with available data in 5 world regions including EAP, ECA, MENA, SA, and SSA

[b] Possible range in Z-score: -2.5 to +2.5, where -2.5 is the worst governance, and +2.5 is the best governance

Source: World Bank's World Development Report (2007) and Governance Matters (2008)
World Health Organization's World Health Statistics (2008)

On average, the survey-responding countries tend to be better in term of governance performance than their non-responding counterparts based on the Worldwide Governance Indicator (WGI).[2] The responding countries tend to have better governance (despite poorer and lower health spending) compared to the group means, and if good governance reflects stronger government regulatory capacity in health sector, results of this study on government capacity to regulate private health sector tends to be a high estimate.

[2] Based on the normalized Z-score, nearly all LIC and most MIC-L have a negative value of WGI, meaning poorer performance than the world average (WGI=0), hence, a less negative value means the better or higher WGI.

3.2 Major constraints to health regulation

A. Political constraint[3]

Countries varied in the intensity of the political constraint in exercising authority by key regulators with respect to their economic profiles. In LIC, we observe a relative higher level of the political constraint facing the organizations that oversee quality of health facilities (i.e., accreditation agency, 57%) and health practitioners by professional council (53%) than in MIC-L (40% and 33%, respectively) (Table 2). The survey respondents in most LIC (64%) perceived NGO or CSO who are watch dogs for health consumer protection had a relative lower level of such constraint.

Table 2 Distribution of countries by intensity of political constraint

Key regulator	LIC (N=17)		MIC-L (N=15)	
	Relatively low [a]	Relatively high [b]	Relatively low [a]	Relatively high [b]
Professional council	47.1%	52.9%	66.7%	33.3%
Health facility accreditation agency	42.9%	57.1%	60.0%	40.0%
Health financing agency/purchaser	53.3%	46.7%	60.0%	40.0%
Government regulatory agency	64.7%	35.3%	40.0%	60.0%
NGO/CSO	64.3%	35.7%	84.6%	15.4%

[a] Score range 1-3 from 1-5 rating scale (1=lowest, 5=highest)

[b] Score range 4-5 from 1-5 rating scale (1=lowest, 5=highest)

For most MIC-L, the key regulators of health facilities quality (60%) and professionals (67%) and non-government consumer protection agencies (85%) worked under a relatively low level of the political constraint. In a contrary, government agencies in most MIC-L (60%) faced a higher difficulty in health regulation due to the political constraint than in LIC (35.3%).

B. Administrative constraint[4]

Regulators in LIC were faced with a relative higher degree of administrative constraint in a much more proportion than that of the political constraint (Table 3). The LIC reported greater difficulties in the administration of regulation by health professional council in the largest proportion (88%). Other key health regulators faced a high level administrative constraint in 50-75% of LIC.

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[3] Refers to 'the use of inappropriate influence on regulatory bodies by interest groups, which can be the problem of command-and-control measure of health regulation'.

[4] Refers to 'an inadequacy of resources and human capacity to enforce compliance to rules and regulations, to monitor results, and to punish the non-compliant actors'.

Table 3 Distribution of countries by intensity of administrative constraint

Key regulator	LIC (N=17)		MIC-L (N=15)	
	Relatively low [a]	Relatively high [b]	Relatively low [a]	Relatively high [b]
Professional council	11.8%	88.2%	40.0%	60.0%
Health facility accreditation agency	30.8%	69.2%	50.0%	50.0%
Health financing agency/purchaser	25.0%	75.0%	53.3%	46.7%
Government regulatory agency	35.3%	64.7%	26.7%	73.3%
NGO/CSO	50.0%	50.0%	53.9%	46.1%

[a] Score range 1-3 from 1-5 rating scale (1=lowest, 5=highest)

[b] Score range 4-5 from 1-5 rating scale (1=lowest, 5=highest)

Similarly, among MIC-L, we observed a higher proportion of relative higher administrative than political constraints. Proportion of the government regulatory agencies in the MIC-L working under the high level of administrative constraint goes up to 73%, compared with 60% for political constraint.

C. Information constraint[5]

Information constraint has not been fully realized by the key informants in most countries as a high level of difficulty as compared with their perceptions toward the administrative and political constraints. Only for NGO/CSO in MIC-L that the information was rated a high constraint in a greater proportion (69%) than the administrative constraint (46%) (Table 4).

Table 4 Distribution of countries by intensity of information constraint

Key regulator	LIC (N=17)		MIC-L (N=15)	
	Relatively low [a]	Relatively high [b]	Relatively low [a]	Relatively high [b]
Professional council	52.9%	47.1%	40.0%	60.0%
Health facility accreditation agency	71.4%	28.6%	50.0%	50.0%
Health financing agency/purchaser	46.7%	53.3%	73.3%	26.7%
Government regulatory agency	56.3%	43.7%	46.7%	53.3%
NGO/CSO	60.0%	40.0%	30.8%	69.2%

[a] Score range 1-3 from 1-5 rating scale (1=lowest, 5=highest)

[b] Score range 4-5 from 1-5 rating scale (1=lowest, 5=highest)

[5] Refers to 'inadequate information and evidence on quality, quantity, price of services provided by health providers and capacity to translate the evidence into effective regulatory interventions'.

3.3 Policy concern and institutional capacity of regulatory measures

3.3.1 Policy concern in health regulation

Table 5 presents the proportion of survey-responding countries that reported a high level of policy concern (measured by score 4 and 5) by types of regulatory measures. Majority of the LIC placed a high level of concern over licensing of health practitioners (88%) and registration of health facilities (69%). This is similar to the response by MIC-L in that their top concerns include the practitioner licensing (71%), facility registration (62%), facility accreditation (62%), and control of health purchasing (58%).

Table 5 Countries reporting relatively high concern[a] in their application regulatory measures

Regulatory measures	LIC (N=17)	MIC-L (N=15)
Practitioner licensing	88.2%	71.4%
Facility registration	68.7%	61.5%
Facility accreditation	56.2%	61.5%
Service price control	31.3%	46.2%
Advertisement control	25.0%	42.9%
Health purchasing control	31.3%	58.3%
Practitioner distribution control	26.7%	50.0%
Consumer empowerment	31.3%	26.7%
Private-public dialogue engagement	52.9%	46.7%

[a] Score range 4-5 from 1-5 rating scale (1=lowest, 5=highest)

Interestingly, least proportion of LIC and MIC-L respondents reported high policy concerns on empowerment of health consumers (31% of LIC and 27% of MIC-L). Other issues of low concern from LIC include the controls of health advertisement (25%), health practitioner distribution (27%), health purchasing agencies (31%), and control of price of health services (31%). The policy concerns by MIC-L in these regulatory measures were rated high with a relatively more countries.

3.3.2 Institutional capacity in health regulation

Alarmingly, less than half of countries reported a strong institutional capacity in implementing most of the nine regulatory measures. Controls of health service price and distribution of health practitioners were among the least institutional capacity among LIC; whereas the consumer empowerment was the weakest among the MIC-L.

A consistent pattern emerges that rule setting is rated of having higher institutional capacity than other two steps of implementation: enforcing and monitoring compliance in order to take appropriate and timely sanctions. Fifty percent of MIC-L and 44% of LIC rated a high level of capacity in the rule setting for health practitioner licensing (Table 6).

Table 6 Countries reporting relatively strong capacity a in employing regulatory measures

Regulatory measure	LIC (N=17)			MIC-L (N=15)		
	Rule setting	Enforcing	Monitoring	Rule setting	Enforcing	Monitoring
Practitioner licensing	43.8%	18.8%	12.5%	50.0%	13.3%	13.3%
Facility registration	29.4%	23.5%	11.8%	53.3%	26.7%	26.7%
Facility accreditation	20.0%	20.0%	25.0%	21.4%	14.3%	7.1%
Service price control	6.3%	0%	6.7%	33.3%	26.7%	20.0%
Advertisement control	25.0%	25.0%	12.5%	26.7%	13.3%	0%
Health purchasing control	18.8%	12.5%	6.3%	35.7%	21.4%	14.3%
Practitioner distribution control	7.7%			23.1%		
Consumer empowerment	15.4%			7.1%		
Private-public dialogue engagement	23.1%			21.4%		

[a] Score range 4-5 from 1-5 rating scale (1=weakest, 5=strongest)

Monitoring the performance such as compliance to rules and regulations is the weakest function of all institutional capacities in most countries. Monitoring requires information and other intelligence base as well as human capacity and skills in regulatory agencies. In MIC-L, no respondents reported the monitoring of health advertisement control as a strong institutional capacity and only one did for the monitoring of health facility accreditation. Only one LIC reported the monitoring of health service prices and health purchasing each as having strong capacity.

LIC and MIC-L have great differences in institutional capacity controlling prices of health services; much higher capacity among MIC-L than LIC. Our further analysis indicates that strength of a country in controlling health service price is positively correlated with the national income per capita; the richer the country, the higher capacity to control prices of health services. The correlation coefficients for rule setting, enforcing, and monitoring the price control are 0.74, 0.65, and 0.55, respectively (Figures 2A, 2B, and 2C). Again, capacity to monitoring compliance has the lowest correlation coefficient.

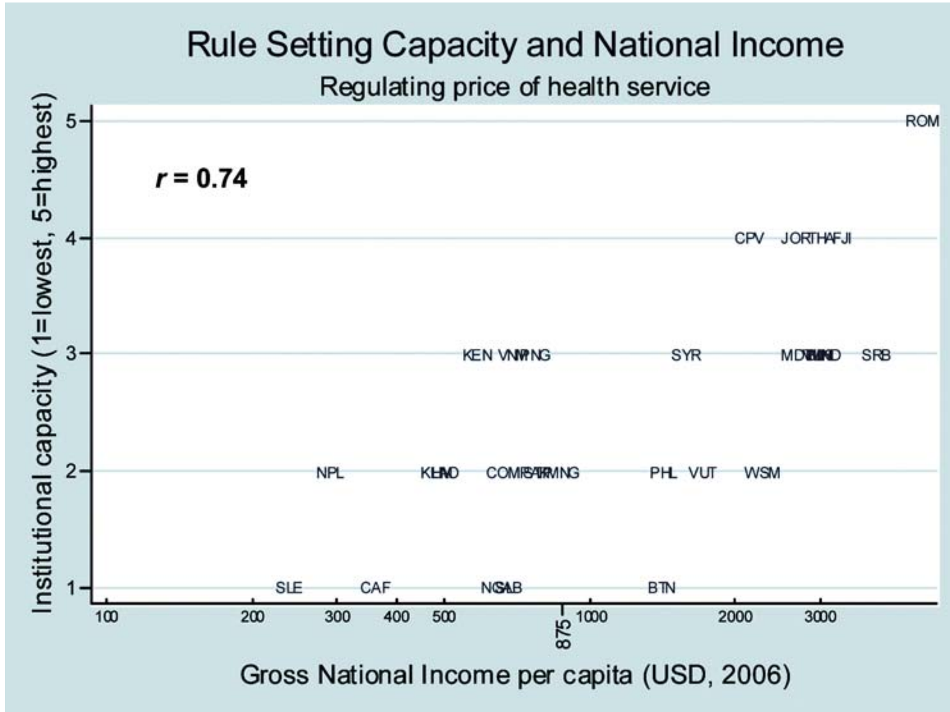

Figure 2A Capacity to set the rules for price control with respect to national income

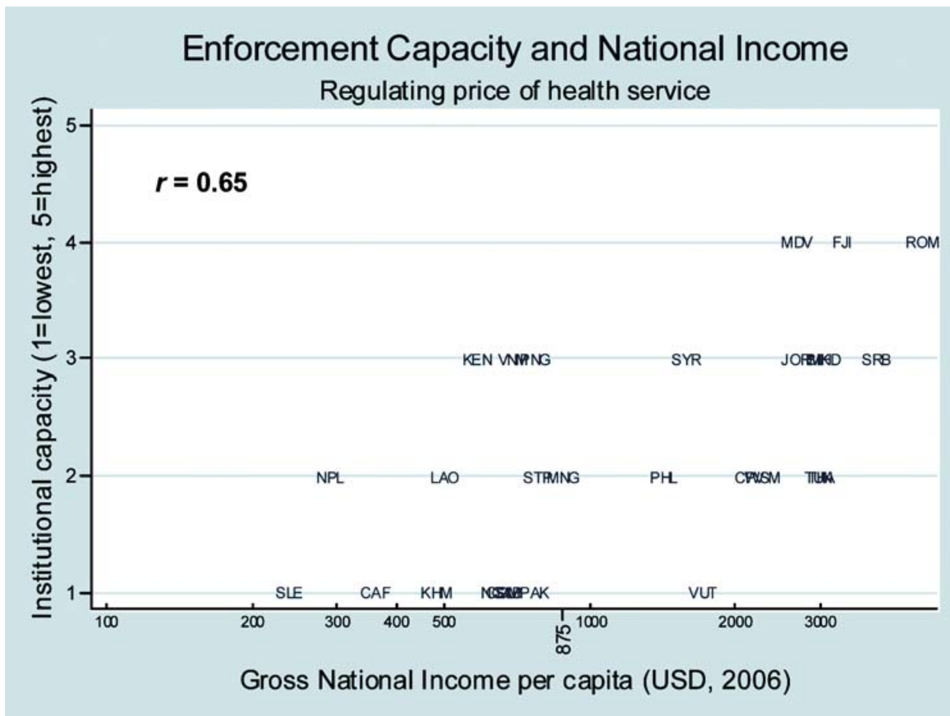

Figure 2B Capacity to enforce price control with respect to national income

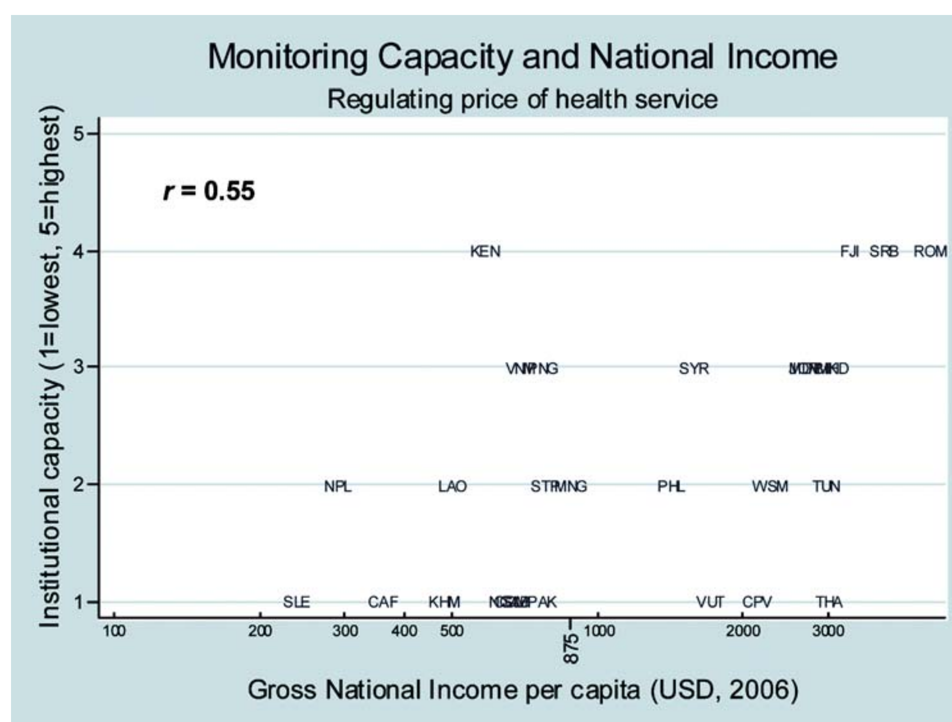

Figure 2C Capacity to monitor price control with respect to national income

3.3.4 Relationship between policy concern and institutional capacity

Country's concern on the regulation tools is correlated in certain degrees with the capacity of a country to set rules, enforce compliance to the rules, and monitor the result for most regulatory measures. However, controlling price and advertisement of health services are the two regulatory measures that show a weak correlation between the policy concern and the institutional capacity (Table 7).

Table 7 Correlation between concern and capacity by regulatory measure

Regulatory measure	Correlation coefficient		
	Policy concern vs. Rule setting	Policy concern vs. Enforcing	Policy concern vs. Monitoring
Practitioner licensing	0.53	0.54	0.46
Facility registration	0.48	0.43	0.36
Facility accreditation	0.35	0.35	0.34
Service price control	0.18	0.17	0.13
Advertisement control	0.14	0.21	0.29
Health purchasing control	0.57	0.54	0.56

3.3.5 Relationship between WGI and institutional capacity of health regulation

Our analysis found the governance performance on regulatory quality dimension of the WGI is correlated moderately with the institutional capacity in health regulation for two dimensions: rule setting and compliance enforcement for most regulatory measures.

The correlation coefficient between the WGI's regulatory quality and the rule setting capacity ranges from 0.26 (for health advertisement control) to 0.48 (for health insurance/purchasing control) (Table 8). Ability to enforce and monitor health advertisement is almost uncorrelated with the regulatory quality (r=0.06 and 0.03, respectively). The monitoring capacity for all other regulatory measures has a weak correlation (0.03-0.36) with the regulatory quality dimension of country's governance performance.

Table 8 Correlation between WGI's regulatory quality and institutional capacity of health regulation

Regulatory measure	Correlation coefficient		
	Policy concern vs. Rule setting	Policy concern vs. Enforcing	Policy concern vs. Monitoring
Practitioner licensing	0.40	0.34	0.17
Facility registration	0.42	0.47	0.26
Facility accreditation	0.40	0.18	0.15
Service price control	0.37	0.32	0.36
Advertisement control	0.26	0.06	0.03
Health purchasing control	0.48	0.33	0.21

3.4 Priority services to increase private sector role and related institutional capacity

This is a forward looking section on the increasing role of private health sector in LIC and MIC-L. We ask key informants on what health services do policy makers think private health sector should be more engaged and what are their institutional capacities to regulate these services?

3.4.1 Priority health services for increased engagement of private health sector

Three quarters (75%) of LIC gave the highest priority to engage private health sector in social marketing of insecticide-treated bed net (Table 9). Surprisingly, the LIC also gave high priority to the tertiary inpatient care (59%) and outpatients (56%). The ambulatory services received the lowest policy priority from LIC for both rural (31%) and urban (31%) areas.

Table 9 Countries reporting relatively high priority a in engaging private sector, sorted by LIC

Health service area	LIC (N=17)	MIC-L (N=15)
1. Social marketing, insecticide-treated bed net	75.0%	57.1%
2. Health promotion and disease prevention, rural	47.1%	53.3%
3. Pharmaceutical service, urban	58.8%	40.0%
4. Social marketing, family planning	58.8%	66.7%
5. Tertiary care for inpatient	58.8%	40.0%
6. Tertiary care for outpatient	56.3%	46.7%
7. Health promotion and disease prevention, urban	52.9%	60.0%
8. Laboratory service	52.9%	46.7%
9. Pharmaceutical service, rural	52.9%	73.3%
10. Radiology service	47.1%	53.3%
11. Specialized care	41.2%	35.7%
12. Ambulatory care, rural	31.3%	60.0%
13. Ambulatory care, urban	31.3%	46.7%

[a] Score range 4-5 from 1-5 rating scale (1=lowest, 5=highest)

Most MIC-L respondents placed high priority engaging private sector to provide pharmaceutical service in the rural area (73%), followed by the social marketing of family planning service (67%). The lowest priority was given to specialized care (36%) and tertiary care (40% for inpatients and 47% for outpatients).

3.4.2 Capacity to regulate health service where private sector should engage more

The country's institutional capacity in health regulation seems to vary greatly by areas of health services they wish to engage more private health sector. Overall, only a minor fraction of the respondents, especially from LIC reported a strong capacity in the regulation of most health services.

The service areas rated a strong institutional capacity by the highest proportion of LIC are pharmaceutical service in urban area (40%) and social marketing for insecticide-treated bed net (36%) (Table 10). In a contrary, the weakest capacity was given to regulating pharmaceutical service in rural area (7%) and the social marketing of family planning service (7%) even though these two areas were placed at a high policy priority to engage private health sector by a comparable half of the LIC respondents. In addition, regulation of the tertiary cares inpatients and outpatient services, despite a high priority given by most LIC to engage more private sector, were rated as strong capacity by only a minor fraction of LIC (25% and 20%, respectively).

Table 10 Countries reporting relatively strong capacity a in regulating health services, sorted by LIC

Health service area	LIC (N=17)	MIC-L (N=15)
1. Pharmaceutical service, urban	40.0%	80.0%
2. Social marketing, insecticide-treated bed net	35.7%	16.7%
3. Health promotion and disease prevention, rural	25.0%	40.0%
4. Tertiary care for inpatient	25.0%	42.9%
5. Health promotion and disease prevention, urban	25.0%	33.3%
6. Laboratory service	25.0%	53.3%
7. Ambulatory care, urban	20.0%	40.0%
8. Tertiary care for outpatient	20.0%	46.7%
9. Radiology service	18.8%	53.3%
10. Ambulatory care, rural	13.3%	40.0%
11. Specialized care	12.5%	28.6%
12. Pharmaceutical service, rural	6.7%	46.7%
13. Social marketing, family planning	6.7%	40.0%

[a] Score range 4-5 from 1-5 rating scale (1=weakest, 5=strongest)

Among LIC, less than half of them rated strong institutional capacity of regulating these 13 services to achieve health systems goals; highest for urban pharmaceutical services (40%), and least for social marketing of family planning services (6.7%).

Alarming, also less than half of the MIC-L rated strong regulatory capacity for most of the health services they thought private sector should engage more, except regulation of pharmaceutical service in urban area had the highest institutional capacity (80%). The regulation of social marketing for insecticide-treated bed net, despite rated high priority by 57% of MIC-L, was rated high capacity by only 17% of the respondents.

Relationship between a country's economy and the institutional capacity in health regulation varies by service areas. There is a moderate degree of correlation between country's GNI per capita and the regulatory capacity rating especially for health services that require more resources and infrastructures such as ambulatory care (r =0.49 for urban and 0.35 for rural areas) and tertiary care (r =0.41 for outpatients and 0.19 for inpatients); ancillary services, such as radiology (r =0.43) and laboratory services (r =0.37); and pharmaceutical services (r =0.31 for urban and 0.41 for rural areas). Weaker correlation was observed for community-based health care such as health promotion or preventive care (r =0.21 for urban and 0.16 for rural areas) and social marketing (r =0.29 for family planning and -0.02 for insecticide-treated bed net).

3.4.3 Relationship between policy priority and institutional capacity

Countries that gave a high priority in engaging private sector in social marketing of insecticide-treated bed net and family planning tended to be strong in their institutional capacity (r=0.66 and 0.64, respectively) (Table 11). For all countries, correlation between the policy priority and the institutional capacity is relatively weak

for the regulation of urban pharmaceutical service (r=0.28) and laboratory service (r=0.16). The policy priority of regulating other service areas is correlated with the country's institutional capacity at a moderate degree (0.33-0.55).

Table 11 Correlation between policy priority and institutional capacity by health service

	Correlation coefficient		
Health service area	**LIC**	**MIC-L**	**LIC and MIC-L**
1. Health promotion and disease prevention, rural	0.75	0.23	0.54
2. Health promotion and disease prevention, urban	0.76	0.19	0.52
3. Ambulatory care, rural	0.59	0.55	0.60
4. Ambulatory care, urban	0.59	0.46	0.53
5. Pharmaceutical service, rural	0.65	0.38	0.55
6. Pharmaceutical service, urban	0.67	0.22	0.28
7. Social marketing, family planning	0.45	0.80	0.64
8. Social marketing, insecticide-treated bed net	0.56	0.89	0.66
9. Laboratory service	0.47	-0.11	0.16
10. Radiology service	0.41	0.24	0.33
11. Tertiary care for outpatient	0.43	0.50	0.42
12. Tertiary care for inpatient	0.54	0.37	0.46
13. Specialized care	0.43	0.46	0.43

4. Discussion

4.1 Major regulatory constraints

A pattern emerged that a larger proportion of LIC reported high administrative constraint across five regulators; however, there is no clear pattern emerged among MIC-L on the three constraints faced by five regulators.

Among the five regulators, the government regulatory agency has relative higher levels of all three constraints than other key regulators. The government regulatory agencies working under high level of the political constraint tends to face greater difficulty from administrative and information constraints. NGO and CSO had the least though high level of political constraints especially in LIC group where 36% reported high level of constraints.

Evidence from the self-assessment on different levels of three constraints prompts to policy interventions; for example start to identify underlying factors of these constraints, explore feasibility to remove or minimize these constraints. It is felt that administrative and information constraints are relatively easy to be implemented than political constraints which are much related to the general good governance of a country. It should be noted that self-assessment may under-report the real magnitude of political constraints. Therefore the level of political constraint reported by our key informants should be the minimum estimate.

When our samples are biased towards better governance than the group means, the real problems of political constraints for the whole group should be much higher.

Our findings on limited institutional capacity to regulate are consistent with the findings from reviews of international literature (Tangcharoensathien et al., 2008).

It is noted that hospital accreditation mechanisms and financing agencies are not well developed in LIC and MIC-L. This results in lost of opportunities in steering towards quality of care and efficiency through financial incentives, competitive contracting mechanisms and equitable distributions.

When two regulators (accreditation and financing agencies) were not well developed in LIC and MIC-L, other three regulators have potential for capacity strengthening. For example, the government agencies command and control, the NGO and CSO watch dog function and professional organizations councils who were responsible for certifying quality of human resources training. These three regulators should be strengthened by improvement of the administrative and information constraints, though there are difficulties in improving political constraints

On the application of the nine regulatory tools, three are of highest concerns of having weak capacity, licensing of practitioners, and registration of private health facilities through the function of government regulators and health facility accreditation. In addition: public-private dialogues, engagement and trust building are the fourth policy concerns of having low capacities.

As a result of limited development of purchasing agencies, controls of health service price is almost not possible through direct command and control, as controlling price alone, the responses are increased volume of services provided, especially under a fee for service provider payment method. In addition, steering the distribution of health practitioners towards under-served areas cannot be achieved through direct command and control, and this is among the least institutional capacity in LIC. This can be achieved by financial incentives, mandatory rural services by new graduates which requires strong political leadership and commitments towards equity in human resources allocations.

Of the three phases of regulations, rule setting, enforcing and monitoring compliances; a general pattern in LIC and LMIC emerged. There is stronger capacity is rule setting but lack of institutional capacity in effective enforcement and development of information systems for monitoring in order to take appropriate and timely sanctions.

4.2 What services should private sector involve more?

The top three services viewed as high priority by LIC for the increased role of private health sector were social marketing of insecticide-treated bed nets for malaria control, the social marketing of family planning and provision of pharmaceutical service in urban areas. However, there are gross lacks of capacity to regulate private sector for these preferred services. For example, only 7% among LIC respondents reported high capacity (score 4 to 5) to regulate social marketing of family planning services.

It seems that engaging more private health sector in these preferred services requires well developed pre-payment insurance schemes or larger population coverage by these schemes or collective purchasing agencies through the competitive contracting mechanism.

Results from the survey are useful in two folds; first, priority listing of preferred services that private sector has comparative advantage in relation to the public sector, second the identification of their regulatory capacity to increased engagement of private health sector. Further detail investigation is required by Ministry of Health to assess the comparative advantage of private heath sector in relation to the public sector, in providing a wide range of health services for example, curative services, laboratory and diagnostic services, pharmaceutical services, family planning services, distributed of insecticide treated bed nets for malaria control.

5. Conclusions and recommendations

5.1 Conclusion

This global survey did not provide unexpected or surprising results. Although it confirms the weak government regulatory capacity in LIC and MIC-L, it provides greater understanding on which, among the five regulators, has relative strong or weak capacities. This study provides better understanding on the relative institutional capacity in applying nine regulatory tools.

Though the government command and control style regulatory agencies exist for quite sometimes, they failed to performed well and faced political, administrative and information constraints, though a varying degree observed across countries.

As a result of less developed insurance mechanism, social health insurance due to sheer size of informal sector and large proportion of financing healthcare relied on household out-of-pocket; these countries lost opportunities to exert powers on price control. Price and quantity control can be best regulated by the role of health insurance agencies, for example through contract conditions and also ensure standard quality of care provided to their members.

Not only social health insurance, accreditation of health service institutions are not developed in most of the LIC and MIC-L. As a result, these countries lost opportunities to ensure that service qualities provided by both public and private sectors are of acceptable standard.

Though these countries have capacity to set rules and regulations, they failed to exercise their authorities to enforce and ensure compliance to these rules. At the same time, there are lacks of information back-up to keep vigilance of non-compliance; not mentioning capacity to introduce appropriate sanctions. At times policy captures and conflicts of interest between private providers and government regulators impede the appropriate sanctions.

5.2 Recommendations

In such a depressing result, there are some hopes. Perhaps countries may start with minimize the three major constraints. Administrative and information constraints are not too difficult for solve, as these requires less political will. Overcoming administrative and information constraints may target the professional councils, government regulation agencies who provide licensing professionals and registering medical premises.

However, political constraint seems to be more difficult than the others; policy captures and conflicts of interests are closely related to the general good governance of the country. Evidence shows a positive correlation between GNI per capita of a country and the level of government capacity; the richer the country the better the capacity to regulate. This is fostered by the more developed Social Health Insurance and pre-payment schemes; and the better the capacity of government to steer private health sector towards health systems goals. Political constraints can be the most difficult to move and slowly evolve through democratization and increased voice of citizen.

Good governance through the potential role of NGO and CSO who serve as watch dog agencies, however the role of NGO and CSO in most LIC and MIC-L are not well developed. This can be one of the entry points.

Beyond rule setting, there is a need to strengthen capacity on enforcement and monitoring of compliance. This falls under the mandates of administrative and information systems improvement.

For longer term, there is a need to establish or expand financing schemes such as Social Health Insurance for the formal sector employees, the introduction of Community Based Health Insurance scheme, which similarly, serves as a purchaser agency. Health insurance system can, in the future, play an increasing role in regulating private health sector through contracting and purchasing functions.

Lastly, accreditation and quality assurance mechanisms require more sophisticated health systems benchmarking and capacity on continued quality improvement. Positive incentives through contracting accredited public and private providers by insurance agencies is one of the major entry points for sustaining accreditation scheme.

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He is the scientific coordinator of the POVILL consortium {*www.povill.com*}, which is studying poverty-health linkages and the impact of government interventions on household coping in China, Cambodia and Lao PDR. He is an active member of the Future Health Systems Consortium {*www.futurehealthsystems.org*}, which is developing innovative approaches for improving the performance of pluralistic health systems and he is the domain convenor of the STEPS Centre {*www.steps-centre.org*}, which is exploring the inter-relationships between health and a rapidly changing environment.

In recent years he has become particularly interested in the implications for government and civil society of the emergence of pluralistic health systems in which market relations play an important role. He co-edited a recent special issue of *Social Science and Medicine* on Future Health Systems, which explores this issue. In 2007, he led a team which prepared a background paper on making health-related markets work better for the poor, as part of a large Rockefeller Foundation initiative. He then worked with the Future Health Systems Consortium, ICDDR,B and Ibadan School of Public Health to organise workshops in Bangladesh and Nigeria for health sector innovators and health system analysts to discuss new approaches for building appropriate institutional arrangements to encourage better provider performance. A number of exciting initiatives have emerged from these meetings.

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& Health Consultants

Professor Eyitayo Lambo, a health economist and health systems expert, holds both a bachelor's and master's degrees in economics from one of the universities in Nigeria and the United States of America respectively and a doctorate degree in operations research applied to health systems from the University of Lancaster, United Kingdom. He is a Fellow of Operational Research, England.

He was in the academics in Nigeria for sixteen years. He rose from the position of Lecturer Grade II to that of a full professor within eight years.He pioneered academic development in two of the three Universities where he had worked in Nigeria.He was an external examiner to numerous universities in Nigeria and abroad. He has published over 100 journal articles, chapters in books, monographs, text books and consultancy reports and served as editor of a number of academic journals.He took early and voluntary retirement from the university system in 1992.

He served at the World Health Organization (WHO) as Regional Adviser on health economics, health sector reform and health in socioeconomic development in the Regional Office for Africa from 1990 to 1999 before taking an early and voluntary retirement from the United Nations System.

He was appointed Director of the Change Agent Program for Health Sector Reform in Nigeria funded by the Department for International Development (DFID/ UK) from October 2001 to July 20003. In his capacity as Director of the Program, he recruited over one hundred potential change agents and empowered them by taking them on organized study tours to some developing countries that had successfully developed and implemented health sector strategies. Those people formed the critical mass of people that subsequently provided support to Nigeria's first health sector reform movement.

He was appointed Federal Minister of Health during the second term of President Olusegun Obasanjo and he served in that position for a full term of four years. During his tenure, the first Health Sector Reform Program for Nigeria was developed, the National Health Insurance Scheme was launched and many health policies were formulated and implemented. He also served as the Chairman of the Roll Back Malaria Partnership Board from 2005 to 2007.

He is currently the Chief Executive Officer of International Management & Health Consultants, AIDS Support International and Health MDG Support International. He is Chairman of the Scientific Advisory Committee on Stewardship for Infectious Diseases of Poverty of the Tropical Diseases Research/WHO/Geneva, Vice- Chair of

the Ad Hoc Committee on Affordable Medicines for malaria (AMFm), member of the Board of Directors of Medicines for Malaria Ventures (MMV)and Chairman of the Board of United Bank for Africa (UBA) Microfinance Bank among others. He is a member of the following: Global Health Worker Migration Advisory Council, Ministerial Leadership Initiative for Global Health, External Reference Group for WHO Research Strategy, and Global Health Worker Alliance Financing Task Force.

He is happily married with four children and five grand children.

Ariel Pablos-Méndez
Managing Director
The Rockefeller Foundation

Dr. Pablos-Méndez began his public health career at Columbia University working on the emergence of multi-drug resistant tuberculosis in New York City in 1991 and, in 1997 he led the Global Surveillance Project on Anti-Tuberculosis Drug Resistance at the World Health Organization (WHO). In both instances, his research and publications brought about significant and successful policy changes in the field.

His affiliation with The Rockefeller Foundation started in 1998, when Dr. Pablos-Méndez spearheaded the program "Harnessing the New Sciences" on product development for diseases of poverty through public-private partnerships. In 2000, his vision and leadership drove the creation of the Global Alliance for TB Drug Development (New York). He also led the Rockefeller Foundation's efforts in AIDS and a program for the treatment of mothers with AIDS and their families (MTCT-Plus) in 2001. Later, he managed the Joint Learning Initiative on Human Resources for Health. Ariel served as Deputy and interim Director of the Health Program until 2004.

As Director of Knowledge Management & Sharing at WHO from 2004 to 2007, Dr. Pablos-Méndez worked to establish the principles and practice of KM as a core competence of public health, fostering shared learning and social entrepreneurship to help bridge the know-do gap in global health. He advanced the agenda on Knowledge Translation, established WHO Press, launched a Global Health Histories initiative and WHO's e-Health unit, which produced the first global e-Health report in 2006.

In 2007, Dr. Pablos-Méndez returned as Managing Director to The Rockefeller Foundation in New York, where he is currently developing various initiatives addressing the Global Challenge of Health Systems, including eHealth and the role of the private sector in health systems in the developing world.

Dr. Pablos-Méndez is Professor of Clinical Medicine and Epidemiology at Columbia University in New York. He received his M.D. from the University of Guadalajara's School of Medicine (Mexico) and his M.P.H. from Columbia University's School of Public Health. He was elected to the American Society of Clinical Inves-tigation in 2003, and serves in several international health advisory committees and boards.

Sangita Reddy
Executive Director
Apollo Hospitals Group

Ms. Sangita Reddy is the Managing Director of Apollo Health Street, a leading US based healthcare outsourcing firm with worldwide operations. Under Ms. Reddy's guidance, Apollo has become the leading offshore services firm and services some of the largest US payers and providers. Ms. Reddy has been a pioneer in advocating the benefits of the global delivery model and has helped clients in over coming the unique challenges of working with an offshore vendor. For more than 20 years, Ms. Reddy has worked with providers and payers and has helped them optimize costs and improve service delivery. She has earned the respect of international healthcare leaders and has influenced the development of the healthcare information technology industry.

In addition to her leadership role at Apollo Health Street, Ms. Reddy is also the Executive Director of the Apollo Hospitals group, the third largest for-profit hospital group in the world. The Apollo Hospitals group manages upwards of 35 hospitals, 40 clinics and 100 pharmacies. It has strength of 16000 staff with close to 4000 physicians. Ms. Reddy also leads the largest Third Party Administrator in the Indian market which services over 5 million members through its network of 2700 hospitals.

Ms. Reddy holds a B.Sc. degree with honors, from the Women's Christian College, in Chennai. She has subsequently taken post graduate and executive courses at Rutgers University, the Harvard University and at the National Singapore University in Singapore.

Richard Smith
Head of the Health Policy Unit
Department of Public Health and Policy
London School of Hygiene
and Tropical Medicine

Richard Smith is Professor of Health System Economics, and Head of the Health Policy Unit, within the Department of Public Health and Policy at the London School of Hygiene and Tropical Medicine (LSHTM). He also sits on the Management Committee of the WHO Collaborating Centre on Global Change and Health based at the LSHTM, and is an Honorary Professor of Health Economics at the Universities of Hong Kong and East Anglia.

Richard has been a Health Economist for nearly 20 years. Following undergraduate and postgraduate studies in economics at the University of York, Richard held positions in Sydney, Cambridge, Bristol, Melbourne and Norwich, before joining the LSHTM in May 2007.

Throughout his career, Richard has worked across a wide range of areas of health economics. These have included substantial work in the monetary and non-monetary valuation of health, including most recently the application of Sen's 'Capability Approach', aspects related to health care reform and the economics and ethics of genomic developments. However, over the last decade, Richard's work has increasingly focused upon developing the application of macro-economic theory and methodology to the analysis of health and healthcare, the wider economics of globalization and its interaction with health and healthcare, and aspects of trade in health-related goods, services, people and ideas.

Richard's current interests are therefore broadly in the interaction and interface between national health systems and other 'systems' - both within the nation (e.g. tourism, travel and leisure sectors) and between different countries (e.g. through movement of health professionals or disease). This interest has been manifest in three areas: (i) macro-economic modelling of health (care), predominantly through a series of European Union funded projects concerning the impact of infectious disease and polices to contain infectious disease; (ii) economic analysis of the impact of trade and trade agreements, working especially closely with colleagues from the World Health Organization; and (iii) international financing for health and health care, especially the application of the 'Global Public Goods' concept.

Richard has received over £10 million in grant income, published five books and more than 100 journal papers and book chapters. He is an Associate Editor of *Health Economics,* and Member of the editorial boards for the *Journal of Public Health and Globalization and Health*. He has had a long involvement with the World Health

Organization (WHO), and currently sits on the WHO External Scientific Resource Group on Globalization, Trade and Health, the Panel of Experts for the WHO Genomic Resource Centre and is an Expert Advisor in trade for the WHO IHR Roster of Experts. Richard has also acted as an expert advisor for a number of other international and national bodies.

Viroj Tangcharoensathien
Director of the International Health Policy Program
Ministry of Public Health, Thailand

Director of the International Health Policy Program, Ministry of Public Health, Thailand, Doctor of Medicine 1980, served seven years in rural district hospitals before doctoral training in Health Planning and Financing in 1987-1990. He received 1991 Woodruff Medal Award for the outstanding PhD thesis of the London School of Hygiene and Tropical Medicine, on Community Financing: The urban health Card in Chiangmai, Thailand. Upon return, he focuses his work on research into financing healthcare and health insurance development and reforms and research on equity in health. He initiated and updated National Health Account and National AIDS Account. He works closely with decision makers in the Ministry of Public Health, other government levels while maintain its independence as a policy researcher, and provide consultancies, capacity building as well as technical supports for countries in the region.

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