

*Report on*

**Urbanisation, Transport and Health in Asia**

The Australian National University, Canberra, Australia  
16 – 19 February, 2003

Organised by      The Asian MetaCentre  
   for Population and Sustainable Analysis

By  
*Bruce Caldwell*

**Sunday 16 February 2003**

Professor Tony McMichael welcomed the workshop participants and gave an introductory talk on the relationship between urbanisation, transport and health noting that transport could contribute positively as well as negatively but noting that in this workshop we would be dealing mostly with the latter.

The participants introduced each other and following a workshop photograph participated in the welcome reception.

**Monday 17 February 2003**

Professor Vipin Prachuabmoh presented a lecture on population change, transport and health in Asia. She noted that urban growth was still high but beginning to decline in response to slowing overall population growth. Nevertheless the urban population is likely to become a majority by 2030. Megacities are increasingly in Asia. Transportation is under increasing strain due to:

1. Urban growth
2. Increasing commuting – eg Bangkok has 7 million people at night but 10 million during the day.
3. Poor planning
4. Poor vehicle stock
5. Lack of good public transport

Resulting congestion leads to pollution, delays and economic inefficiency, climate change, poor health, heat waves, heat stroke, excessive noise, traffic injury. There is a need to deal with these issues using an inter-disciplinary approach.

Professor Peter Newman's lecture was on transport needs in urban development and links to social development, similarities between Australia and Asia. He emphasised that transport priorities shape cities, but that culture and policy shape these priorities. Cities generally have a maximum extent of about half an hour of average travelling time. In the early cities this involved walking. Over time it came to be applied to public transportation and nowadays to motorcars. Western cities have tended to move down this route at different rates but there are increasing signs of a rejection of this model. European cities in particular are preferring a greater role for public transport and walking. Asian cities often have all three models combined. The highest use of public transport anywhere is among some of the richer Asian cities, often very densely settled, where there has been major investment in rapid transit systems eg Tokyo, Hong Kong and Singapore. The situation is more confused in poorer Asian cities such as Bangkok where city

planners still have to choose what model of the future they want. Public transport is associated with more walking which has multiple benefits providing physical exercise but also bringing people together and helping to create a community. It also acts to reduce pollution and accidents. Transport costs are lower overall in cities with good public transport. Public transit is most popular in cities with fixed mass transit systems.

Professor Gavin Jones discussed the Asia Mega City Projects. The distinction between urban and rural is becoming blurred. In this project they have examined the cities in terms of zones, in particular urban core, inner and outer zones. There are important differences between the zones in access to services and in population characteristics. In Jakarta for example the outer zone according to the most recent census has a much shorter life expectancy than the urban core (for women 61.1 compared to 74.0 years). In megacities such as Jakarta and Manila, great distances and the difficulty of matching housing with job opportunities means that many people must spend considerable time commuting in crowded public transport.

Professor Terry Hull discussed demographic aspects of urbanisation. He reinforced Professor Jones' point that the distinction between urban and rural is diminishing; rural areas are taking on urban characteristics in social, economic and government structures. He noted that it was becoming more difficult to distinguish between urban and rural settlements. Similarly it is becoming harder to define the boundaries. He also noted that much urban growth was a result not only of migration and natural increase, but also of reclassification. Censuses generally place people where they live rather than where they work. Urban growth by its nature is very heterogeneous. Slowing natural increase means an increasing proportion of urban growth is due to migration and reclassification.

Discussion: Professor Lutz noted that most estimates of urban growth including by the United Nations Population Division were simply extrapolations based on an assumption that all populations will eventually urbanise. He suggested that 20 million seemed to be about the maximum population size of large cities. Professor Newman agreed that there was an urban limit, which he related to the half hour limit.

Proposal outlines: Workshop participants then presented their proposals – see outlines/abstracts.

Discussion: Following presentations the participants discussed ethical aspects of data collection, especially when biomedical samples are to be collected, and the critical need for informed consent. In such cases it is important to show children's guardians that the children will benefit thereby. This is especially an issue as the children who may benefit most are older children but the children of most interest for testing may be younger ones.

Dr Peter King presented the Asian Development Bank's perspective. He noted the tremendous growth of motor vehicles and the particular impact on pollution of old vehicles and two-stroke engines. There were good laws but too often these were not enforced. There are many premature deaths with pollution contributing to a wide range of respiratory illness. A European study found that PM10 particulates contributed to 6% of all deaths with motor vehicles being responsible for 50%. People die 18 months earlier than otherwise. Investing in pollution control makes good economic sense. A multi-sectoral approach is required. ADB is supporting regional cooperation in developing standards in air pollution, and a clean air initiative for Asian cities involving the sharing of knowledge. It is critical to develop credible data to convince decision-makers.

Professor Tord Kjellstrom gave a talk on epidemiology methodology. His talk covered case control studies and cohort studies. Key elements of a study include:

1. Exposure measurement;
2. Effect measurement;
3. Confounding factors (associated with exposure and effect);
4. Selection bias;
5. Information bias;
6. Observer bias.

He presented World Health Chart from the Karolinska Institute, Stockholm, as a tool for visualizing health and development data.

### **Tuesday 18 February 2003**

Workshop presentations. The morning opened up with presentations from participants – see outlines/abstracts.

Professor Robyn Norton gave a presentation on Road Traffic Injuries (RTI), She noted that RTIs accounted for 2% of global mortality, 88% of RTI s were in low and middle income countries, 47% in the Asia-Pacific. By 2020 it is estimated that RTIs will be the second cause of mortality. Fatalities are rising but more slowly than vehicles, mortality per vehicle is falling.

1. In Thailand accidents are the second cause of deaths of which RTIs account for about 1/3<sup>rd</sup> - 70 to 90% involve motorcycles.
2. In China injuries are the 4<sup>th</sup> cause of deaths, RTIs being the leading type of injuries.
3. Vietnam similar

Many factors involved, many very basic and seemingly easily addressed. Few motorcyclists wear helmets and fewer still wear them properly. Main conclusions:

1. Increasing incidence of traffic injuries
2. Major gaps in prevention

Professor Boyd Swinburn presented a lecture on the obesogenic environment and the lack of physical activity. He discussed how the physical environment affects how much exercise people get. Obesity increases as people get less exercise and the diet changes. Modern cities and modern life-styles discourage physical activity. He noted that there is a pattern to obesity as there is to other life-style concerns. It is at first most noticeable among women, the older population, in urban areas and among the affluent. Over time it begins to affect men, the young, the poor and rural areas with signs of improvement appearing amongst those most at risk. Nevertheless it has noticeably worsened in all countries with Australia only slightly behind the United States.

Theme Groups: The Workshop participants then broke up into theme groups to work on the various proposals.

Group Discussion: Following the Theme Groups there was a short discussion on points to come out of the working groups. The proposals were at vary different stages of development with some almost finalised, others still at the conceptualisation stage. Some groups were interested in individual studies while others were interested in doing comparative studies involving cities in several countries.

Ms Rita Seethaler presented the economic analysis of health impacts of transport. She discussed a major European project estimating the economic impact of air pollution in three European countries, France, Austria and Switzerland. The project first estimated the proportion of all deaths due to PM10 and then the proportion of these deaths due to vehicular emissions. It then estimated the costs including the costs of treatment and people's willingness to pay. Interestingly the

middle-aged were more risk averse than the young or the old, perhaps because they had greater family responsibilities.

### **Wednesday 19 February 2003**

Professor Wolfgang Lutz discussed the Wellcome Trust's Health Consequences of Population Change Program (HCPC). Wellcome is the only foundation to fund exclusively scientific research. Wellcome provides two kinds of grants for Asia:

1. A program grant to the Asia MetaCentre for Networking involving capacity building and research coordination
2. Project Grants to study well-defined HPCP questions in Asian countries 2-3 years project duration. Principal Investigator (PI) needs to be well-established scientist. He/she will get no salary support.

A form for a pre-proposal can be found on Wellcome's web site.

Wellcome prefers single studies that show depth but will consider proposals as part of comparative studies.

Professor Lutz then discussed future forecasting models of urbanisation and transport. He proposed a model: P-D-E-H

- Population (age, sex, place of residence - urbanisation, other characteristics)
- Development (economic growth, built infrastructure, institutions, behaviour patterns)
- Environment ((ambient air quality)
- Health

He noted population can affect health patterns directly as in changing age structures influencing disease patterns, or indirectly as when urbanisation leads to changes in transport systems which lead to injuries, obesity, changes in access to health and increased air pollution. The indirect changes are in many ways the most interesting.

There has been much modelling, the most famous of which was the Club of Rome projections. These were highly sophisticated but many of the assumptions were simply wrong. Later Ehrlich-Holdren Models (IPAT – Impact, Population, Affluence, Technology) were much simpler, indeed too simple. IIASA has developed a PDE (Population, Development, Environment) model. Models are important for making decisions on the future but it is important to outline assumptions.

Proposal development: Participants spent time developing pre-proposals.

Professor Tony McMichael chaired the closing session. Discussion of how the pre-proposals could be improved. Professor McMichael emphasised the need to develop research questions that were well defined and open to being tested.

In summary the workshop brought together a diverse range of people with different expertise together and highlighted many key research questions and methodological issues. It was agreed that the participants would work further on their pre-proposals following the meeting. There was some discussion on how the workshop would be followed up.

Appendix 1

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