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EXPERT GROUP MEETING (EGM) ON TRANSPORT FOR SUSTAINABLE DEVELOPMENT

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Cities, Transport and Climate Change: Problems and Opportunities for Sustainable Development

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Presentation Outline

- Introduction to work in Transport at UN-Habitat.
- Key messages.
- Transport consumption patterns and motorization trends.
- Cities, transport and climate change.
- Car use and urban planning – neighborhood design variables and integrated land use planning.
- Transport demand management techniques.
- Further research challenges for transport, cities and climate change.

Activities and Programs – Energy and Transport Section

Mandates

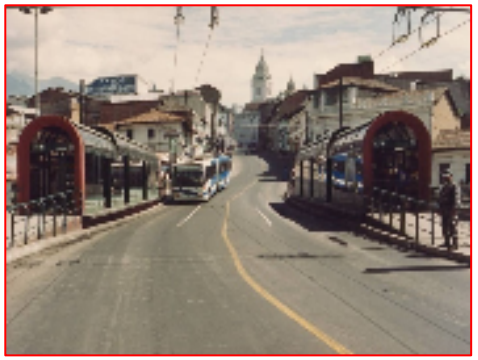
- Chapter 7 of Agenda 21 on Human Settlements
- Chapter 9 of Agenda 21 on Energy and Atmosphere
- Transport and Energy Provisions of the Habitat Agenda
- Transport provisions of the Joint Plan of Implementation (JPOI) from WSSD

Thrust of the Program: Past and Present

- Promoting human settlements development strategies that better integrate land use planning, environmental quality, energy consumption and transport to minimize trip distances and reduce negative development impacts;
- Promoting public transport and non-motorized transport (bicycling and walking) as either a substitute or complementary mode of travel to the private car.

Program Thrust (Con't)

- Increase the efficiency of existing transport operations through improved planning and integrated management of all modes of transport;
- Improve levels of mobility for the urban poor through promotion of affordable transport programs and appropriate transport technologies;
- Decentralize urban transport and energy infrastructure planning, investment decision-making and management to the local level.



Program Accomplishments and Highlights

- Expert-group meetings, field studies and publications on managing the demand for urban energy and urban transport through economic measures and regulatory instruments;
- Promoting better planning and management and improving operational efficiency of public transport systems in developing country cities;
- Linking poverty alleviation to mobility and transport by promoting cost-effective non-motorised transport for the urban poor

Current and Future Program Emphasis and Program Activities

- Linking accessibility and mobility planning to urban land valuation and forced evictions of the urban poor through activities with the Global Campaign on Secure Tenure;
- Linking urban transport concerns with urban solid-waste management programs to fashion improved livelihood opportunities for the urban poor;
- Reducing GHG emissions through pilot demand management programs implemented at city and regional level with GEF partners.

Key Messages

- Transport is the world's fastest growing source of Greenhouse Gas Emissions.
- In the next 30 years, over 90% of future emissions from transport will be from developing country cities.
- Given rates of motorization in these cities, the most effective method of reducing the ecological impact of transport is through encouraging modal shifts and integrating transport and land use planning to reduce travel.
- CSD 18 and 19 is a unique opportunity to focus the world's attention on the importance of urban transport on climate change.

Why Talk About Transport Consumption Patterns in Developing countries?

- Families and individuals spend upwards of 30% of their incomes on transport and energy services.
- Workers commute up to four hours a day (sometimes walking) to low-paying jobs, wasting time and losing productivity.
- Traffic accidents cause almost 1,500,000 deaths and additional millions maimed annually. By 2020, transport will kill more than HIV, War and TB combined. The majority of victims are the poor and children.

Women are seriously constrained in their access to transport

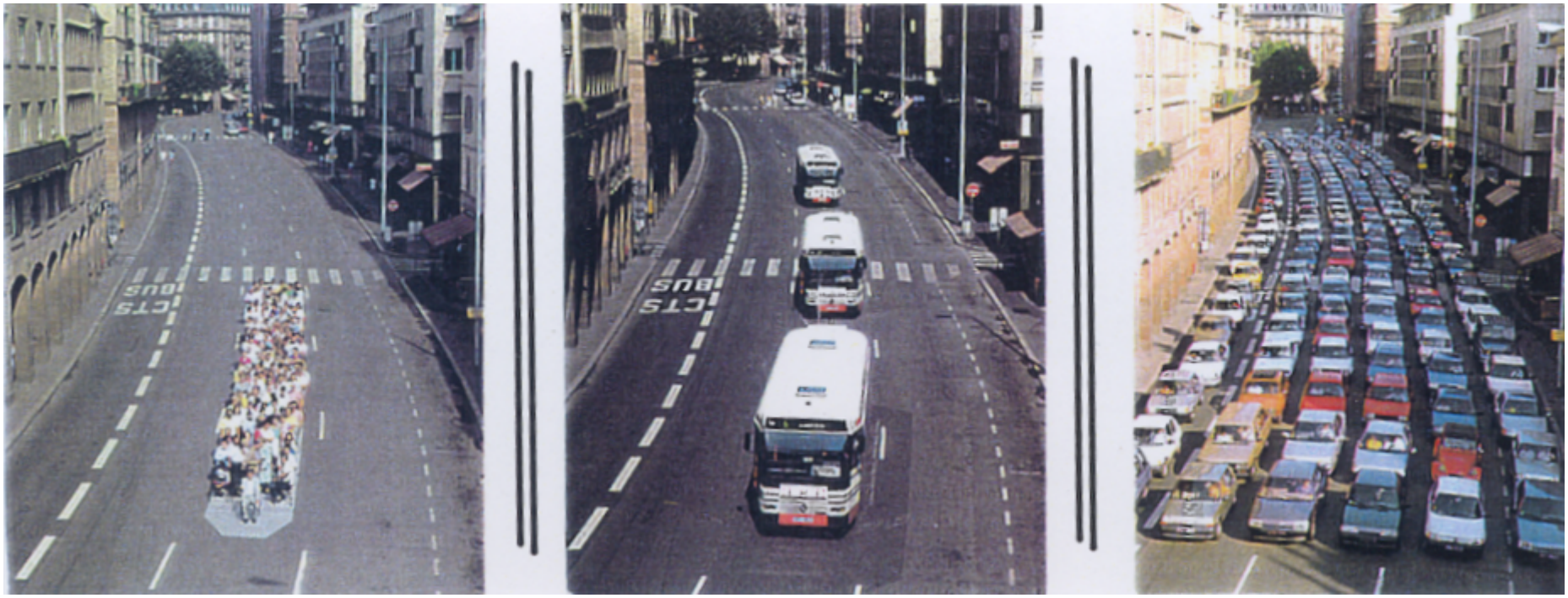
- Men often control household income and therefore also control transport.
- Buses, trains, matatus or any other form of public transport run infrequently complicating travel-related household/childcare responsibilities.
- Some women will not use public transport due to sexual harassment.

Urban Transport Challenges in Developing Country Cities

- Integrating urban mobility with other aspects of city development, including land use.
- Upgrading informal settlement internal circulation and improve access.
- Rationalizing the allocation of road space across all classes of users.
- Ensuring gender equity in urban transport provision.
- Improve travel demand forecasting and emissions modeling capability.

Which future?

How Cities Consume Urban Space for Transport or Why Build High Capacity Public Transport Systems?



- Traffic Congestion Gets Worse as More and More People Own Cars and Motorcycles

Cities and Climate change

- The world is experiencing unprecedented urbanization as the majority of people now live in urban areas.

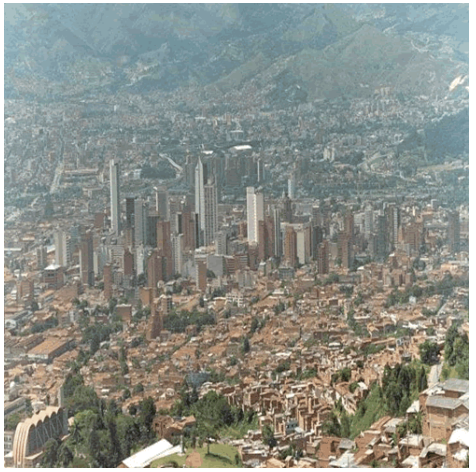
- It is no coincidence that global climate change has become a leading international development issue precisely at the same time and the same rate as the world has become urbanized. Indeed, the two are virtually inseparable.

Cities and Climate change (cont.)

- This is because how we plan, manage, operate and consume energy in cities in cities is in fact, the key driver behind climate change. 75% of commercial energy consumption occurs in cities. 80% of greenhouse gas emissions that cause global warming comes from cities.
- So its crucial to recognize that cities and urban residents are not just seen as victims of climate change in terms of seal level rise but also part of the problem. And if they are part of the problem, they need to be part of the solution.

Cities, Climate Change, Car use and Urban Planning

- A disproportionate amount of car use occurs in or near cities because people are richer there and because urban sprawl encourages car dependence.
- Cities provide the opportunity to travel less because want people want to be closer together and yet much of the world's travel is in cities. This happens because:
  - People increasingly live in cities
  - People in cities are better off on average than those in rural areas.
  - Urban regions are expanding and the size of urban regions are expanding more rapidly than populations.



Cities and Climate Change

- While cities and local authorities must indeed adapt to the impacts of climate change within their boundaries, they remain in the driver's seat in terms of continued efforts at mitigation.
- There is still time to reduce the ecological footprint of cities by more responsible planning and management of how, where when and by what mode of transport we move ourselves and the goods we produce and consume around our urban areas.
- One additional issue are the billions of urban poor or slum dwellers who consume very little mobility at all. We need to pay more attention to the coming environmental implications when these urban residents demand mobility just like any other urban resident. And local authorities will be at the front-line of this response.

Transport Policy Options for Mitigating and Adapting to Climate Change

Because transport markets on their own cannot adequately reduce GHG emissions, government action is critically important:

- Research, Development and Demonstration
- Energy Efficiency Standards
- Pricing Policies
- Land use Planning and Infrastructure Investment
- Public Information and Education
- Combining different types of policies
- for synergies can reduce GHG emissions significantly in the near terms and substantially in the long term

Neighborhood Design Variables and Climate change – The research

- Increasing housing density tend to decreases vehicle ownership and increases public transport use;
- Mixing structural housing types also reduces auto ownership, while increasing unit sizes increases it;
- Cities with curvilinear roads and streets increases auto ownership and increase GHG emissions;
- Neighborhoods with local shopping slightly reduces VKT by private car;
- Cities with many wide arterial streets within neighborhoods or on the periphery increases auto use;
- The presence of bicycle lanes and recreational paths within cities and/or neighborhoods reduces auto use and reduces GHG emissions.

Why is Travel demand Forecasting Important For Sustainable Transport and Air Quality?

- Transportation planning affects air quality more than emissions control technology does.
- We must forecast travel demand under different sets of policies to be able to know the cost-effectiveness of different pollution control strategies.
- Transportation energy use and greenhouse gas emissions are increasing because the growth of transport activity is outstripping energy efficiency gains.

Information Needs for Transport Planning in Developing Country Cities

- Who is traveling where, how, when and why?
- How would consumers respond to particular sets of changes in price, speed, reliability or convenience and comfort? What is their willingness-to-pay for these changes? What are their actual preferences?

Non-transport related demand management measures

- Encourage mixed land uses for trip minimization and trip length reduction.
- Decentralized economic development planning to increase development elsewhere.
- Restraint on economic growth of principle city centres
- Designated areas for growth control over patterns of development
- use of preferred locations for extreme travel-generating land uses
- fiscal inducements for relocation to specific areas

Transport Demand Management Planning Measures

- Zoning regulations (controlling densities).

- Regeneration of decaying areas or urban in-fill overall improvements to housing and neighborhood development.

- Parking standards for new development.

Regulatory Measures for the Demand Management of Urban Transport

- Traffic management
- Parking controls
- Area-wide traffic bans
- Traffic controls and priority for public transport and bicycles/pedestrians
- Deregulation/Privatization of public transport
- Staggering work hours
- Park and ride facilities

Targets and standards for local authorities to set and implement

- Targets for improved road safety, reduction of noise and air pollution levels.
- Targets for reduced traffic levels and certain types of traffic (e.g. restrictions of heavy freight deliveries).
- Targets for increased carpooling, public transport use, cycling and walking.
- Setting tailpipe emissions standards, enforcement of standards.
- Vehicle , Inspection and maintenance programs.

Economic Instruments for Demand Management of Urban Transport

- Road Pricing
- Area Licensing
- Vehicle Ownership charges, or surcharges, taxes, import duties, licensing, registration fees
- Parking charges
- Public Transport Subsidies
- Pedestrian and bicycle priority

Further Research Challenges for Transport, Cities and Climate Change

- In terms of climate change adaptation, mitigation, land use planning and urban transport infrastructure investment patterns, it is unclear as to whether or not cities should centralize or decentralize; densify or sprawl, to a greater or lesser degree than is presently the case.
- There is an issue of timing: there will be very short term risks due to unexpected and increased frequency of severe weather that need to be dealt with now and then longer term issues of sea level rise. The costs and benefits of various timed development scenarios need to be thought out. We need local climate change action plans.

Other Research Challenges

Challenge	Specific Research Need
Weather-related travel time delays	Regional effects on transportation system performance; travel behaviour response to delays by consumers; timing and locational shifts in transportation demand.
Smart Growth	Economics of Coastal development and impacts of climate change on land value changes, speculation and infrastructure investments
Integrating environment and transport plans	Enhanced understanding of interactions between air and water quality; identification and dissemination of best practices; search for environmentally –beneficial transportation plans and strategies
Institutional barriers and how to do risk assessments	Comparative analysis across government and private sector stakeholders; how to elevate climate awareness in transportation services provision; scenario-building and testing; identification of vulnerable assets; exploration or reinsurance industry experience

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