

# Urban Housing and Transportation Towards Zero Carbon Emission

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# Introduction

- Carbon dioxide (CO<sub>2</sub>) or Carbon monoxide (CO) is released or emitted when fossil fuel or any vegetal or animal remain is burnt or decomposed.
- Emissions even during agricultural practices
- Emissions increases Greenhouse gases
- Greenhouse gases increases atmospheric temperatures leading to global warming
- Global warming affects atmospheric, floral and fauna activities

# Carbon and human activities

- The more a city, a nation, an economy, a region, or a civilization carry out human activities that releases carbon, the more it has Carbon footprint. This can lead to:
  - Increasing urban heatwave
  - Unbearable night time temperatures
  - Melting of polar ice leading planetary ocean rise
  - Vegetal cover loss
  - Catastrophic forest fire bursts
  - Drying of lakes, rivers and water bodies
  - General threats to fauna and floral habitats

# Sources of Carbon emission in urban areas

- Virtually all activities that uses energy
- Transport
  - Directly - use of fossil fuels: PMS, Diesel, Kerosine, Aviation fuel, etc.
- Housing
  - Directly – fuel wood for cooking, heating, lighting
  - Indirectly – use of electronics, transport (mode & distance),
  - Individual household electricity generation
  - Hence, healthy and wealthy cities are not where most people have cars but where people use and encourage cycling and walking.

## **Questions of the day**

- What is the state of our urban transportation?
- Does our housing system encourage zero or low carbon emission?
- Is urban housing or transport system set to increase or reduce carbon footprint?
- Are we aware of future implications of our carbon footprint?
- Is there conscious or popular reactions?

# Urban Transportation

- The main system or process that make cities work.
- Create and maintains liveable cities.
- Presently a diversion from previous practices; where there is:
  - Encouragement of individual and small motorized modes
  - Conflicting of land uses
  - Absence or disappearance of taxes and city buses
  - Growing peri urban neighbourhoods
  - Increasing distances and transportation modes to places of work and other activities

Burgeoning cities like ours with ineffective city transport services increases carbon emission on a large scale.



**Plate I: Increasing use of motorized transportation**



# There should be a shift towards mass transit to curb carbon emission

Here are 200 people in 177 cars



on 1 light rail train



**Plate II: Individual and collective Urban transport system**

**The practication of efficient and reliable urban bus services comes with tremendous environmental and social benefits**



**Plate III: Use of municipal transport system**

# URBAN HOUSING AND CARBON EMISSION

- Housing provision (private or public) encourages serious uncontrolled urban sprawl.
- Minna more than doubled in both size, structural and population density
- Urban activities also increased tremendously
- Failing clean energy resource generation and usage
- Uncontrolled housing growth; unlike Minna before year 2000.

- **Major residential clusters are within work distances (before 2000)**

- GRA and Type B quarters - Government house
- Railway quarters - Rail transport workers
- Old Airport quarters - Old secretariat
- Main city centre - Market and the CBD
- Students and lecturers - On-campus

Today, city residents and workers are on their own to provide accommodation and transportation.

# Conclusion

- Housing growth means more individual motorized transportation.
- Increasing motorized transport system means more and unmitigated carbon emission
- Uncontrolled housing growth leads to more distance to activity areas and more carbon emission.
- Little or no concerted effort to understand and mitigate carbon emission

- Less emphasis on mitigation
  - Tree planting to absorb atmospheric carbon
  - Mass deforestation
  - Uncontrolled urban deforestation
  - Little attempt at green urbanization
  - Ecological footprint unmatched by correctional procedures as exhibited by the concept of handprint at city and regional levels

# Recommendations

- Need to have city buses - since there is no proper provisions for mass transits at present
- Improvement on clean energy use
- Subsidized renewable energy sources
- Create access to city fringes to encourage effective and efficient urban bus services
- Support and create people-initiated awareness programmes.

- Create and support Green City Initiatives
  - Mass tree planting activities
  - Mandate planting of trees for residential properties to get building approval
  - Trees should be saved from building and construction activities
  - Encourage greening of urban and peri-urban areas



Thank you for listening