

## **Experiences and Milestones in Carbon Governance in Kampala City region: Challenges of satisfying global concerns at the local level**

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### **ABSTRACT**

Almost 50 per cent of the world's population lives in cities, increasing to 60 per cent by 2030. The consumption of energy and resulting CO<sub>2</sub> emissions are a central element of urban metabolism. They are one component of overall material flows. Accounting for an estimated 78% of global carbon emissions, urbanized regions must figure prominently in any earth systems governance frameworks. It becomes important to consider institutional mechanisms that, in part affect carbon management at a range of spatial and temporal scales. This paper is part of a PhD project to explore the efficacy of city planning approaches in reducing the carbon footprint from transportation in the Kampala City region. It draws on evidence from the City region based on key stakeholder interviews to examine the current architecture of institutions (their form, networks/relationships) to determine their level of success to deliver carbon reduction targets together with how best the initiatives started at the local level feed into the global environment agenda. Results are inconclusive but they indicate that there is no strong carbon management regime to influence carbon stocks in the city. The city authority by virtue of the Local Government Act (1997) is responsible for the management of carbon but the actions taken to influence carbon emissions (land use planning, traffic management, traffic calming) suffer from lack of a strong carbon constituency as well as the economic and management upheavals that continue to characterize the city governance frameworks.

***Key words: Institutions, carbon, governance, Kampala***

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### **1 INTRODUCTION**

The contribution of cities to climate change poses a number of major dilemmas. On one hand, the concentration of households, firms and organizations in urban areas means that the larger cities of the developed world are significant sources of harmful emissions. On the other, those cities that are in the greatest danger from the impact of climate change are currently amongst the least guilty polluters. At the same time it is clear that huge contributions to the reductions of greenhouse gas emissions and the protection of people from the dangers posed by climate change can be made by and within cities. Global warming is a well-documented problem that is far bigger than just the city of Kampala. However, many of the changes needed on an international level begin with practices at the local level.

A number of initiatives have been launched in many countries to participate fully in implementing fully Kyoto mechanisms. For the transport sector in Uganda and many other sectors in the country, no targets have been set but even when there are no carbon

governance targets in Kampala, the city has already developed programs that would effectively govern carbon emissions, via initiatives related to energy consumption, transportation, land use planning etc. These measures are continuing to be examined in terms of their role in implementing fully carbon governance mechanisms in the country.

## **2 THE INSTITUTIONAL AND POLICY MAKING PROCESS IN KAMPALA**

Two international treaties, the United Nations Framework Convention on Climate Change (UNFCCC) and the Kyoto Protocol (KP), form the core of the emerging climate change regime. These treaties require all countries to develop national policies to address emissions by sources and removals by sinks of greenhouse gases. Although in reality developing countries including Uganda have no obligation under the Kyoto Protocol to the United Nations Framework Convention on Climate Change (UNFCCC) to reduce GHG emissions at present, by ratifying these conventions, Uganda has become part of the international community that is committed to taking responsibility for its GHG emissions.

There are other institutions that have been put in place to influence carbon emissions in the country. These include; the constitution of the Republic of Uganda 1995; the supreme law of the land that provides for environmental protection and conservation. In its objectives and principles it provides, that the state shall promote sustainable development and public awareness of the need to manage land, air, water resources in a balanced and sustainable manner for the present and future generations. Article 39 of the Constitution provides for an individuals right to a clean and healthy environment. This provision is complemented by Article 50 which gives any person the right to take judicial action to redress the breach of a fundamental right, irrespective of whether the breach affects him or another person. Article 245, provides that parliament shall, by law, provide for measures intended: to protect and preserve the environment from abuse, pollution and degradation; to manage the environment for sustainable development; and to promote environmental awareness.

The National Environment Act Cap 153 of 2000 establishes the National Environment Management Authority (NEMA) as the overall body, charged with the management of environmental issues. The Authority in consultation with the lead agencies is empowered to issue guidelines and prescribe measures and standards for the management and conservation of the environment. As regards pollution, the Act provides for the establishment of adequate environmental protection standards and to monitor changes in environmental quality, the publication of relevant data on environmental quality and resource use, to ensure that the polluter pays and environmental awareness is treated as an integral part of education at all levels.

The energy policy recognizes that there is lack of quality control of the oil products despite the fact that they are posing an increasing hazard to public health and the environment. A major objective of the policy is to manage energy related environmental impacts where government shall among other things “work towards the establishment and acceptance of broad targets for the reduction of energy related emissions that are harmful to the environment and energy users. For the transport sector and many other sectors, no carbon governance targets have been set, but a list of measures and instruments to manage carbon has been initiated. Nearly all these are land use and vehicle related (Table 1).

Table 1: Instruments of carbon governance in the transport sector in Kampala City

		Instruments of carbon governance		
		Land use measures	Economic instruments	Regulatory approaches /Policy measures
LAND USE AND URBAN DESIGN	Scale			
	N	<ul style="list-style-type: none"> <li>Encouragement of consolidated urban growth, which makes full use of existing infrastructure as opposed to dispersed, expensive sprawl.</li> </ul>		<ul style="list-style-type: none"> <li>Identifying and eliminating incentives that encourage development in areas not served by public transport.</li> </ul>
	C	<ul style="list-style-type: none"> <li>Encouragement of mixed land use zones and the intensification of lower density areas</li> </ul>		
VEHICLE EMISSION	L	<ul style="list-style-type: none"> <li>Creating community partnerships with local governments to develop mechanisms that discourage development that threatens the city's carrying capacity</li> </ul>		<ul style="list-style-type: none"> <li>Creating zoning laws that allow for mixed development</li> </ul>
	N	<ul style="list-style-type: none"> <li>Encouragement of the introduction and use of unleaded fuel</li> </ul>	<ul style="list-style-type: none"> <li>Increasing the price of fuel on an annual national budgetary basis</li> </ul>	<ul style="list-style-type: none"> <li>Setting air pollution standards and introduce fuel quality specifications</li> </ul>
TRANSPORTATION	C	<ul style="list-style-type: none"> <li>Regulating the construction of new service (fuel refilling) stations</li> </ul>	<ul style="list-style-type: none"> <li>Charging parking fees for use of city parking spaces</li> </ul>	
	N	<ul style="list-style-type: none"> <li>Construction of the northern by pass to relieve road congestion in the city centre</li> </ul>	<ul style="list-style-type: none"> <li>Increasing emissions related vehicle taxation and traffic fees from 100 shs (0.05 USD) to 200 shs (0.1 USD) per c.c (Table 2)</li> <li>Increasing the Value Added Tax from 17 % to 18 % in the 2005/6 budget</li> </ul>	<ul style="list-style-type: none"> <li>Ending the importation of vehicles 7 year old or more in the 2004/05 budget to phase out grossly polluting vehicles</li> <li>Implementing of the 1998 Traffic and Road Safety Act</li> </ul>
	C	<ul style="list-style-type: none"> <li>Introduction of one way streets and redesigning road intersections</li> <li>Encouragement the introduction of high capacity/occupancy public bus system</li> </ul>	<ul style="list-style-type: none"> <li>Increasing parking charges in areas that are accessible by public transport</li> </ul>	<ul style="list-style-type: none"> <li>Using revenues from parking fees for improvement of public transport, walking and biking systems and environmental improvements</li> </ul>
	L	<ul style="list-style-type: none"> <li>Providing a system for wide traffic calming measures including an integrated system of foot and cycle paths</li> </ul>		

L – Local level, C – City Level and N – National Level

The Traffic and Road Safety Act 1998 recognises that road safety is a serious concern in Uganda and proposes policies aimed at improving road safety, such as enforcing speed limits, scrapping older vehicles and enforcement of vehicle maintenance. The Urban Authorities Act Cap. 27 1964, and the Town Country Planning Act, Cap 30 1964 provide for the orderly planning of urban settlements and the countryside. These laws are being reviewed and the revision will take into account environmental concerns especially Environmental Impact Assessments (EIAs) for planning of urban activities, pollution management and other environmental standards.

### **3 CARBON GOVERNANCE CHALLENGES IN KAMPALA**

Kampala's urban growth patterns pose big problems and for the most part the responses of the city authority to these are much ad hoc. Kampala's local government is hugely fragmented to say the least and GHG responsibilities tend to be fragmented among different agencies and jurisdictions. However, a number of initiatives have been started in the city to manage carbon.

#### **3.1 Traffic and road pricing**

Congestion prices and parking prices have proved to be effective in many cities. However Kampala does not have a policy on congestion pricing neither is there hope it will be in place in the near future. There is even hesitation to go for such schemes in the city of Kampala. Restricting amount of parking places and adjusting the cost of parking is a good instrument to reduce use of cars especially in city centers. In the city of Kampala, the capacity to regulate parking is limited by the small fee charged to all motorists and the fact that many parking lots are private. To all intents and purposes, the road infrastructure is free. It is paid for out of general tax revenue and users contribute a very small proportion of what they use. Users do not pay the real social costs (pollution, congestion, accidents) of vehicles either. According to Kampala City Council, the main constraints facing the city in the promotion and wider application of economic instruments are the low culture for tax compliance and high rates of tax evasion.

#### **3.2 Fuel consumption patterns in the City of Kampala**

The transport sector accounts for approximately 76% of all petroleum products consumption, with petrol, diesel, kerosene, aviation fuel and fuel oils taking 43 %, 31%, 11%, 8% and 7% of this market respectively. Since, revenues from fuels play an important role in financing of Uganda's national budget, contributing 25% of government revenue (NEMA, 2002); government has gone ahead to liberalize the fuel sector with now over 15 licensed petroleum companies. Most of the city planners are therefore blinded by the potential revenue from these facilities and don't seem to mind about the environment.

There are over 500 refilling stations in the country with Kampala alone accounting for about 26 % of them. The amount of fuel consumed by transportation in Uganda has increased both absolutely and as a proportion of the total used in all sectors. Energy consumption has been on the rise since 1991 with current consumption at 550,000 cubic meters (Figure 1). Motor vehicle fuel sales grew from 202,184 cubic meters in 1991 to 382252 cubic meters in 1999 and 398,899 cubic meters in 2002. A number of important players benefit from the status quo with a growing number of close governments confidants being involved in the sale of fuel. Sources in the National Environmental Management Authority (NEMA) say that as the oil industry steadily becomes profitable; they are increasingly facing a lot of pressure especially from politicians to contravene environmental laws. *Many of the fuel businesses are backed by big political muscle*

and a lot of hand wringing is involved. Fuel is a hot commodity and there is a lot of money at stake and therefore there are so many dirty games and death threats involved. One would not want to put his/her neck out there. Some people think they are way too powerful to bend the law.

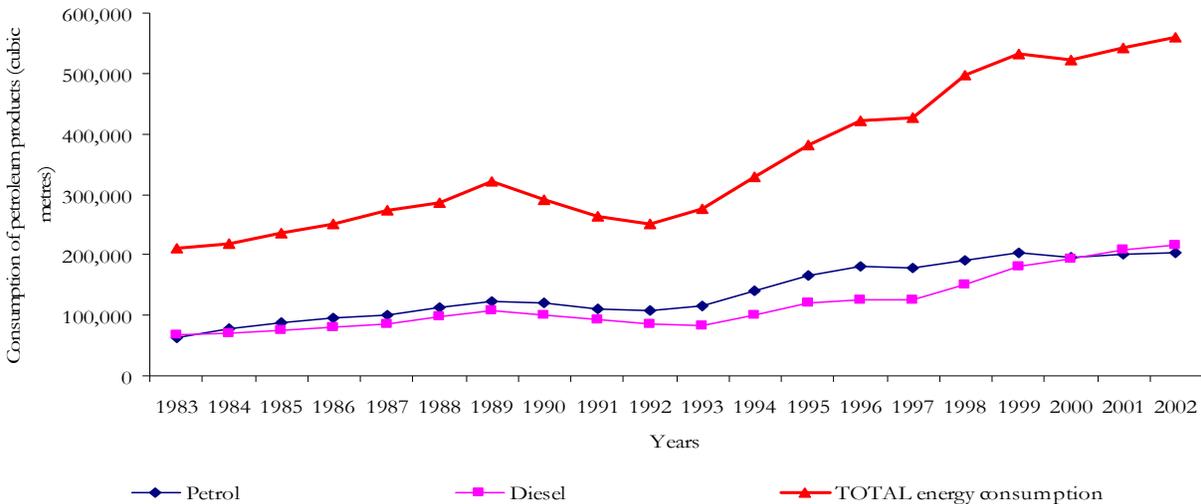


Figure 1: Fuel consumption in Uganda

### 3.3 Increases in motorization

Vehicle ownership and use have continued to grow on a strongly increasing trend (Figure 2), tending to be the highest in the city region where there is a strong preference for private motorized transport. The vehicle population has multiplied by a factor of 5 from 53,000 in 1992 to over 247,000 in 2004. Vehicles are regarded as status symbols and in conjunction with a more consumer based social status conscious society, the people of Uganda are moving towards vehicular transport. Daily vehicle dependence has increased from 67% in 2001 (Isolo, 2001) to 85% in 2004.

The importation of hundreds of thousands of vehicles into the country has not come about as an accident. Decision makers often see economic growth as associated with vehicular growth. This prevailing mind has set a bias for motor vehicles in existing policies. It also regards non motorized vehicles as inferior, degrading and a relic of the past. At national level, vehicles are seen as sources of government revenue in form of vehicle import fees, vehicle licensing, etc., while at the local government level, vehicles are seen as sources of revenue in form of parking and other operating fees.

The lack of manufacturing plants and economic constraints makes the price of new vehicles very high and yet very few Ugandans can afford to purchase brand new vehicles. Although import duty on second hand vehicles is so high at 56 % (URA, 2004) that people cannot do away with old cars to acquire relatively new ones whose emissions may be less dangerous. Results from the study indicate that the average age of cars in Uganda is 12 years. Vehicles therefore remain on the road for considerably longer periods for as long as they are mechanically able to run. The poor maintenance facilities as well lack of enforceable inspection standards results in a large proportion of the vehicle fleet with high fuel consumption and emission levels. While the trend has been to reduce the number of diesel vehicles in many countries, there has not been similar

effort in Uganda. There is a fear that vehicles which have been phased out in other countries are ending up being dumped in Uganda.

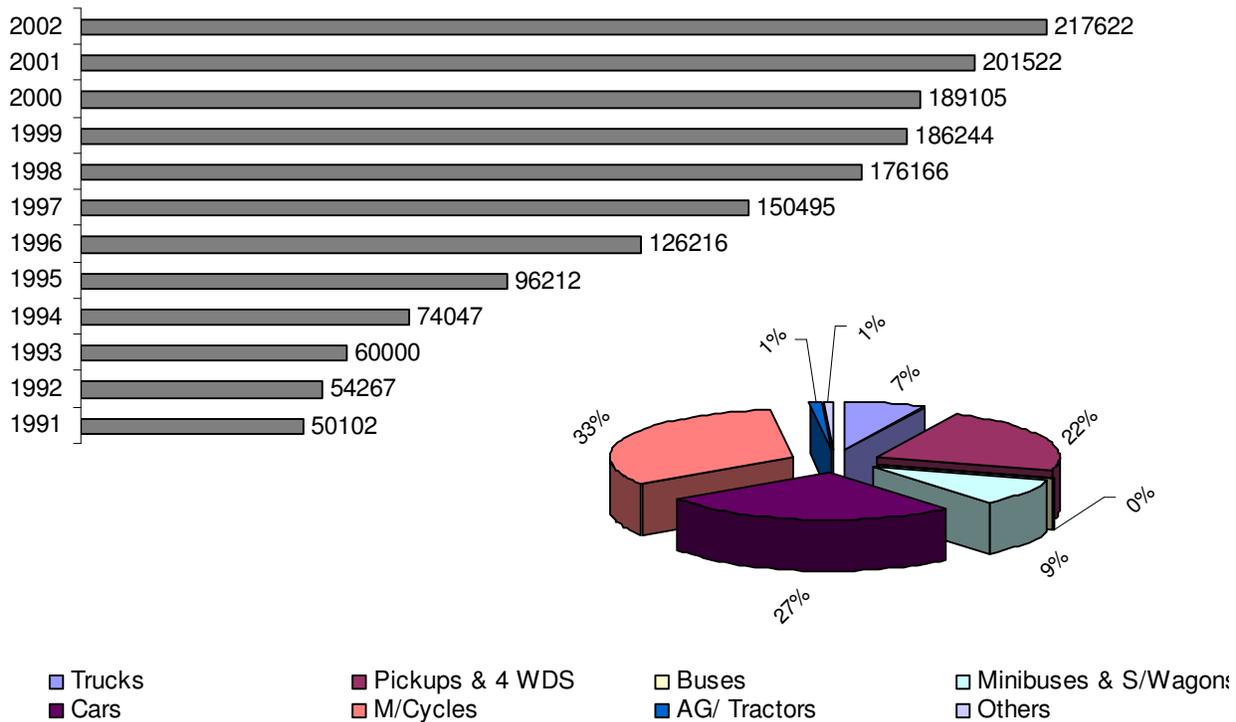


Figure 2: Growth and composition of motor vehicle population in Uganda since 1991 (UBOS, 2003)

Private employers in collaboration with financial institutions have also initiated special car loan and financing schemes for their employees and other interested vehicle buyers to acquire vehicles at low interest rates; for example Nile Bank-Ramzan Motors partnership (Wheel source), Orient Bank-Spear Motors partnership. These car financing and loan schemes allow anyone that earns a salary to access a loan of up to Shs 30 million (about \$17500) to own cars. These kinds of schemes have further attracted a large population craving to own cars.

### 3.4 Planning capacity in Kampala City

The development of Kampala City has been influenced by a number of planning schemes. The Town and Country Planning Act (1964) required each urban authority to prepare land use plans, indicating the main features of the land use pattern and the investment program in the urban area. Developments in Kampala were also controlled by a series of planning schemes and ordinances namely: the 1919 Kampala planning scheme, the 1930 Planning Scheme, the Town Ordinance of 1938, the Municipality Ordinance of 1948, the 1951 Planning Scheme/ outline scheme, the Urban Authorities Ordinance of 1958; and the Town and Country Planning Ordinance of 1948. These planning schemes have had little control in directing the shape, size, functioning and intensity of development of Kampala City. By and large, these schemes were not effective in ensuring proper land use planning and plan implementation for proper and harmonized urban development.

Presently the development of Kampala is guided by the 1972 structure plan which was concerned with planning for population growth and transport needs by the year 2000 expected to be 1.3 million people with 140,000 motor vehicles in the country. Most activities whether government, commercial and social largely concentrated in the centre while main roads radiated from the city centre. This type of development was found to incapable of accommodating rapid growth of the city at that time. A suitable rectangular grid street pattern was drawn in an effort to generate more transit and dispersed development to follow three major highways running through the centre. This strategy was clearly grounded in a close relationship between land use and transport, and it included the need for an efficient public transport system. In this respect, this plan was an early “leader” in current thinking on the land use transport relationship.

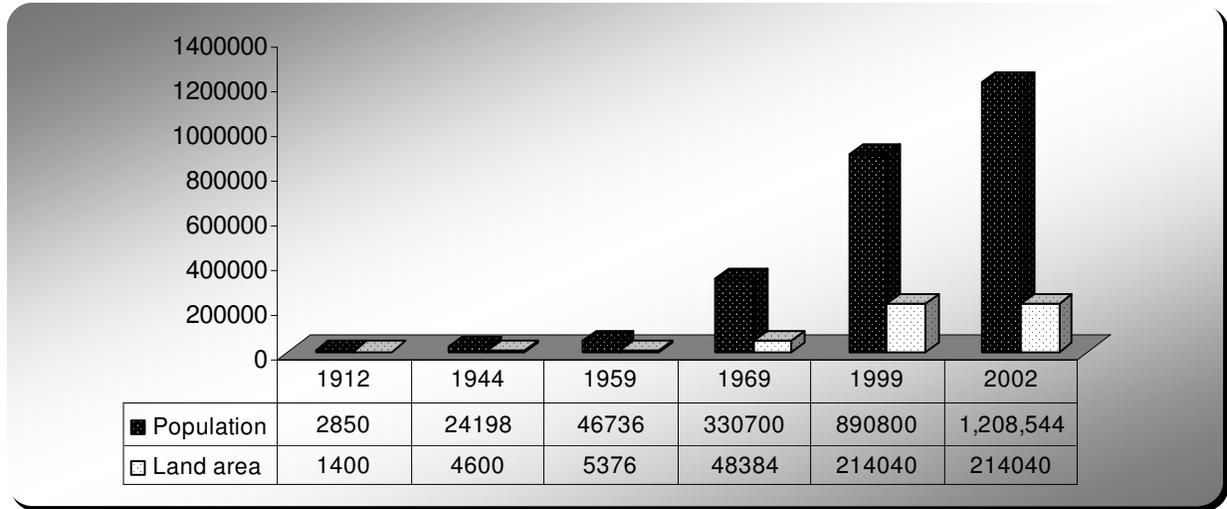


Figure 3: Increase in land area and population in Kampala City

Much of the city was not planned to accommodate even half of the present population (Figure 3) and the city planning authority has had less control over the location and timing of development and therefore Kampala city expanded haphazardly. With ineffective urban management, the land use pattern has become chaotic, leading to inefficient use of the land and poor transport systems. City growth has therefore been entertained and tolerated under the “de-facto policy of “I own my land and I should develop it in my own way”. In this case, Kampala City Council merely reacts to growth and stays out of land use decisions. There is no consensus on where growth should occur, or where growth should be directed in order to lessen its impact on the environment. Since 1962, and more especially, since 1971, urbanization in Kampala has proceeded on what can be described as “uncontrolled basis” (Figure 4). As a result, while the formal planning programs and procedures developed previously remain legal in place, they bear less and less reference to what has actually taken place on the ground. Kampala comprises of a mix of highly regulated, former colonial developments, and a wide range of informal urban neighborhoods. The principal challenge facing its planners is to strike a balance between the ongoing need for certain forms of regulation, and the reality of an emerging city, which continues to be created largely at the hands of the informal sector.

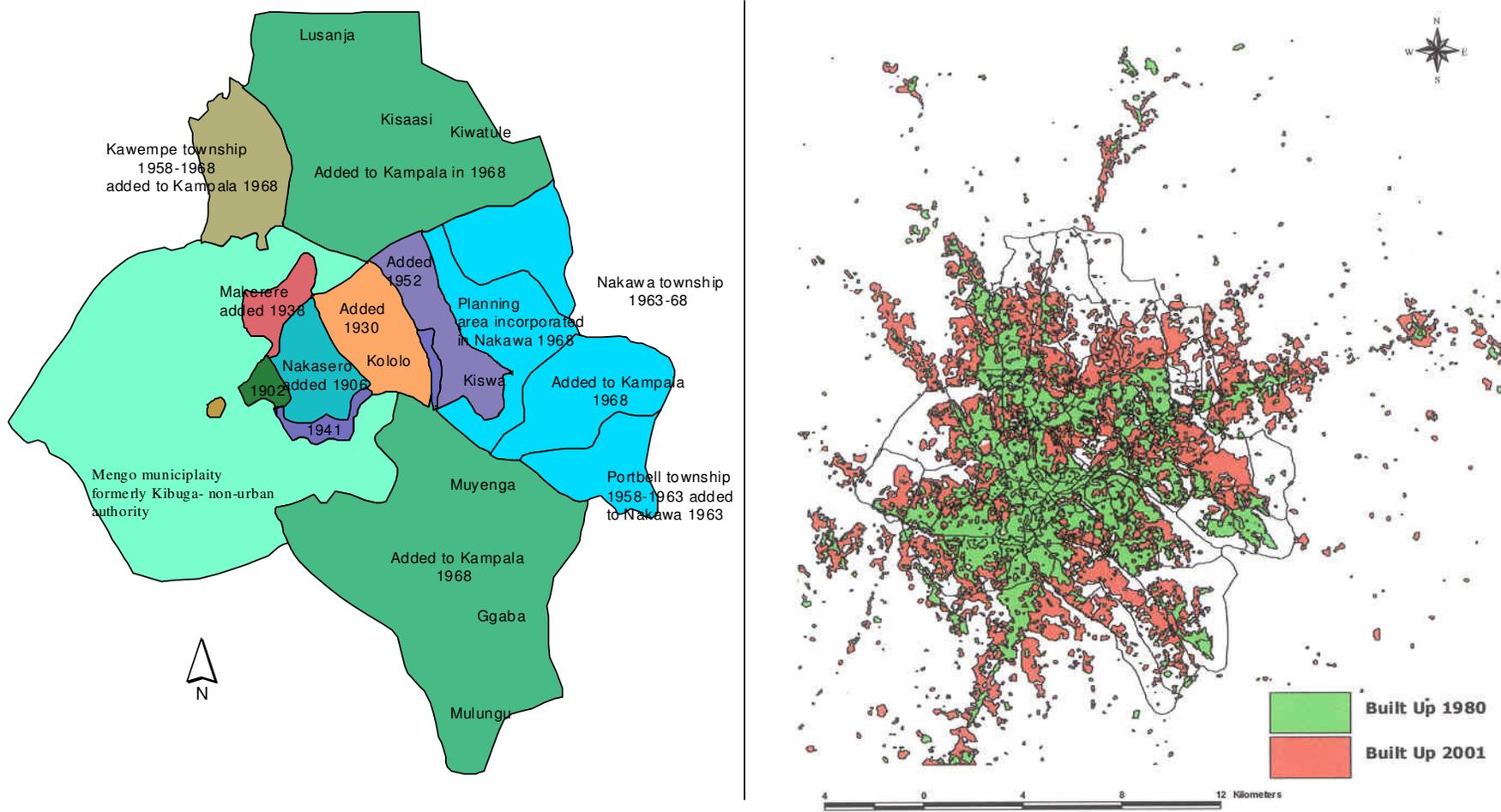


Figure 4: Kampala spatial development patterns and built up area - 1980 and 2001

There is a preference for development towards the East, South and North West in the city. This is where the big outward push is bulging into rural agricultural land (Figure 4). The growth of Kampala has taken a linear shape following the main arteries out of the central business district. Kampala is a radial city expanding outwards from its historic centre along the major roads leading to Jinja, Entebbe, Masaka and Luwero. Overtime “infill” development has occurred between these roads, on both a planned and unplanned basis. New development on the outer edges of the city has been offset by more intensive growth and re-development (i.e. intensification) of the city core.

A further ingredient of Kampala’s growth is the influence of the private sector, which is very active in property development on the fringe areas of Kampala region. Individual and other private development initiatives are exacerbating the spatial legacy by locating new housing far from major business, employment and in most cases far from road networks rather than infilling denser areas closer to the CBD (Table 3). Currently this sort of spatial planning occurs because of lack of coordination or integration at the institutional level. This pattern does not in any way ascribe ill intent or suggest poor results by government agencies or departments. Rather it speaks to a need for a coordinated framework in which to consider spatial decisions. Guidelines and policies are lacking to assist the private sector in making decisions to allocate their real estate and housing developments. For example Akright Properties has since 1999 established 8 housing estates with a total housing capacity of 2337 units most of which target the upper and middle income earners. Even with the NSSF proposals to construct housing estates in Nsimbe Estate, under the political limelight over the use of money, the mere fact that the proposals are to have the housing estate 26 kilometres from the city means that the private sector is still having a big input to housing in the country. This further creates a conflict between the private sector which had taken the leading role in developing the city and the planning authority that has to guide the pattern of development in the city.

Table 3: Distance of new housing estates from the Central Business District

Real Estate Developer	Housing Estate	Land area (acres)	Number of housing units	Distance from the CBD	Average housing density
Akright Projects	Kirinya	n/a	92	15	4 homes per acre
	Namanve I	n/a	78	12	i.e. one house on
	Namanve II	n/a	30	12.5	1000 sq.m (middle
	Namanve 111	n/a	n/a	12.5	income)
	Namugongo	n/a	n/a		
	Kakungulu	500	2000	18	6 houses per acre
	Lubowa	30	127	8	i.e a house on 600
	Kitiko	n/a	35	13	– 800 sq.m
Property	Nile village	n/a	n/a	13	
	Seguku Estate	n/a	n/a	n/a	
	Katale Lower Estate	n/a	n/a	n/a	
	Katale Hill Estate	n/a	n/a	n/a	
Jomayi Masters	Mutundwe-Nalumunye Estate	n/a	n/a	n/a	
	Bandwe Hill Estate	n/a	n/a	n/a	
	Katale Bunamwaya	n/a	n/a	n/a	
	Kisaasi – Kulambiro	n/a	n/a	n/a	
	Namugongo Kira	n/a	n/a	n/a	

In general land use and transport plans in the city are evaluated on the basis on indicators like traffic congestion. A lot of attention has been paid to the promotion of traffic flow and GHG emissions are not a problem as such to demand attention under present circumstances. There is an assumption that the city is still growing and emissions are something to live with. Even attempts to encourage high occupancy public transport systems in the city face tremendous problems. Government authorities continue to drag their feet either for lack of a vision for the city, selfish interests or blackmail from the major taxi body Uganda Taxi Operators and Drivers Association (UTODA), who expressed the worry that the high occupancy vehicles such as public transport buses would push them out of business and create unemployment to hundreds of drivers and conductors. At the same time stable policies cannot survive changes in administration that occurs every four years. Urban planning tools need to be carefully coordinated and to be internally consistent to meet Kampala's urban development and infrastructure objectives. The consistency is very rare in Kampala as regulations, infrastructure investments and taxes are often designed at different levels of government and for very different purposes which have nothing to do with the city functioning and GHG emissions.

### **3.5 Air quality planning systems**

Kampala does not have its own municipal emission standards for motor vehicles. Instead, a series of draft national emission standards have been employed for specific vehicles in the city. These proposed emission standards developed by the National Environmental Management Authority have been based of foreign standards. Even though foreign standards have proved to be useful elsewhere, their adoption in Uganda may prove problematical, with considerable delays in achieving compliance. These standards are believed that they can be applied to determine the conformity of new vehicles.

## **4 Conclusions**

Carbon emissions are not something that the city authority able to reduce. Although there are many approaches/strategies that have been put in place at the city level to reduce carbon emission, the institutional framework does not allow for effective management of carbon at both the city and national level. There are two categories of actors with an interest in carbon emissions reductions in the city. However, it points to a question of scale. While the central government is concerned with national issues including trans-boundary pollution and setting standards for fuels and vehicle emissions, local emissions are managed by local governments delegated to urban authorities. The actors fall in opposing directions that reflect differences in their basic aims and possibilities for implementation. While the international community, donor groups, academia and the research community together with environmental lobby groups point to the needs to have absolute reduction in carbon emissions, the central government represented by the Ministry of Finance, Planning and Economic Development seems to take a very flexible approach in reducing carbon emissions. At the city level, Kampala City Council, in its city development strategies considers and plans for brown problems as the most urgent that need priority attention and carbon emissions reduction is something that can wait. As the city grows, a better understanding of institutions is therefore necessary if carbon is to be integrated into the urban development objectives of Kampala City Council.

## 5 References

Banister, D. (1992), Energy use, Transport and Settlement Patterns In Breheny M (ed), 1992: *Sustainable Development and Urban Form* Peon Limited London

Chunlin, C. *et.al* (1998), *Transport and Urban form: A case study of Des Moines Metropolitan Area*. Transportation Conference Proceedings

EPA (2001), Environmental Protection Agency; *EPA Guidance Improving Air Quality through Land Use Activities* EPA's Transportation Air Quality Center Transportation and regional Programs Division

EPA (2001), Environmental Protection Agency; *Our Built Environment – A Technical Review of the interactions between land use, transportation and air quality*, Development, community and environmental division (1808) Washington DC

Frost, M., Linneker, B. & Spence, N. (1999), The energy consumption implications of changing work travel in London, Birmingham and Manchester 1981 & 1991. *Transport Research A* Vol. 31 No. 1 Pergamom

GTZ (2003), International fuel prices May 2003 3<sup>rd</sup> Edition at [www.internationalfuelprices.com](http://www.internationalfuelprices.com) Accessed on 23<sup>rd</sup> June 2004

Hall, P. (1992), Transport: Maker and Breaker of Cities In Mannion A.M & Bowlby S.R (1992): *Environmental Issues in the 1990s*. John Wiley and Sons Chichester

Holtzclaw J. *et.al* (1990), *Explaining urban density and transit impacts on auto use*. California Energy Resources Conservation and Development Commission

IEA (International Energy Agency), (1997), *Transport, Energy and Climate Change* IEA Press (97) 34 Paris.

Isolo, P. M. (2001), *Urban sprawl and the challenges of public transport services delivery / provision in Kampala City Uganda*. Master of Philosophy Social Change (Geography) Institute of Geography Norwegian University of Science and Technology Trondheim

Isolo, P. M. (1997), *An urban study of traffic congestion in Kampala City*. A Bachelor of Arts Geography dissertation Department of Geography Makerere University (Unpublished)

Kanaroglou, P & South, R. ( ), *Can Urban Form Affect Transportation Energy Use and Emissions? An Analysis of Potential Growth Patterns for the Hamilton Census Metropolitan Area* Energy and Urban Form special Feature

Lazarus, M, Von Hippel, D, Hill, D & Margolis, R (1995), *A Guide to Environmental Analysis for Energy Planners* Stockholm Environment Institute Boston Massachusetts

- Liebig, L. (2003), *Systematic of energy taxation in Uganda – Analysis and recommendations*. A Ministry of Energy and Mineral Development Energy Advisory Project (EAP) with the support of the GTZ Kampala Uganda
- Magezi, S. (2001), *Mitigating Transport Sector GHG Emissions: Options for Uganda* AFREPREN Climate theme group KAMPALA, Uganda
- Magezi, S. (1995), *Incremental costs of Green House Gas mitigation in the transport Sector in Kampala*.
- MEMD (2002), Ministry of Energy and Mineral Development; *Uganda's Energy Policy* Ministry of Energy and Mineral development Kampala Uganda.
- Ministry of Natural Resources, (1996), *Sources and sinks of greenhouse gases in Uganda*, A UNEP/GEF sponsored project (US Country Studies Programme) final report (updated version) Department of Meteorology, Kampala Uganda.
- MNR (1995), Ministry of Natural Resources; *The National Environment Action Plan for Uganda* National Environment Action Plan Secretariat Kampala Uganda
- Daily Monitor (2005), *Are we about to see a better Kampala?* Daily Monitor Newspaper editorial June 25<sup>th</sup>, 2005 Nation Media Kampala Uganda
- Muhumuza, R. (2005), Use of more diesel engines may increase pollution In the *Monitor Newspaper* Friday March 25 2005 Pp 21. Monitor Publications Limited Kampala Uganda
- Nangoli, F (2002), Kampala City to get wider roads; In *The New Vision Newspaper*, Thursday December 19 2002
- Naude, C. et.al (2000), *Global Climatic Change, Developing Countries and transport Sector Options in South Africa*; Institute of Transportation Studies University of California Davis
- Næss P (1995): *Urban Form and Energy Use for Transport. A Nordic Experience* A PhD Thesis Trondheim NTH
- NEMA (1998), *State of Uganda's Environment 1998*. National Environmental Management Authority Kampala Uganda
- Nyabongo (1971), *Kampala Master Plan – Planning for rapid growth* Kampala Uganda
- Olupot, M (2004), Musumba warns KCC on planning, In *the New Vision Newspaper* Monday August 30<sup>th</sup> 2004 Page 6. New Vision Printing and Publishing Corporation Kampala Uganda
- Ouma, B. D. (2004), UTODA, KCC can do more for Kampala *Monitor Newspaper* Friday September 2<sup>nd</sup> 2004 Monitor Publications Kampala Uganda

Owens, S. E. (1986), *Energy, Planning and Urban Form*, Pion Publishing, London

Rajamani, J. *et al.* (2003), *Assessing the impact of urban form measures in non-work trip mode choice after controlling for demographic and level-of-service* Transport Research Board

Shanka, D. B ed., (1979), *Transportation Energy Conservation Data Book*, Oak Ridge National Laboratory Oak Ridge, Tennessee

Talen, E. (2003), Measuring Urbanism: Issues in Smart Growth Research; *Journal of Urban Design* (forthcoming)

Tibabiganya M. K (2004), What can we do about the mad traffic? *Monitor Newspaper* 2<sup>nd</sup> January 2004, The Monitor Publications Limited Kampala

UBOS (2000), *Statistical Abstract*, Uganda Bureau of Statistics Entebbe Uganda

UBOS (2003), *Statistical Abstract*, Uganda Bureau of Statistics Entebbe Uganda

URA (2000), National Transport Database URA Kampala Uganda

Van Nostrand Associates (1994), *Kampala Urban Study 1994 – 2004 Structure Plan A* World Bank Urban Study project Kampala City Council