



Kenya NGO Earth Summit 2002 Forum

SUSTAINABLE HUMAN SETTLEMENTS

***A REPORT ON CIVIL SOCIETY REVIEW OF THE IMPLEMENTATION
OF AGENDA 21 IN KENYA***

**BY NICKY NZIOKI
FEB.2002**

Table of Contents

EXECUTIVE SUMMARY	I
SUSTAINABLE HUMAN SETTLEMENTS	1
INTRODUCTION	1
PROPOSED WORKING METHODOLOGY	2
THE SCOPE OF THE STUDY	2
REVIEW OF THE NATIONAL HOUSING POLICY IN KENYA	2
THE HOUSING POLICY FOR KENYA	2
<i>Objectives of the Housing Policy</i>	2
<i>Goals of the Housing Policy</i>	3
<i>The Elements of the Housing Policy</i>	3
<i>Finance for housing</i>	4
<i>The role of the community in Housing</i>	4
SITUATIONAL ANALYSIS IN KENYA SINCE 1992:	4
<i>The Urbanization Phenomenon</i>	4
EVOLUTION OF HUMAN SETTLEMENTS	5
SQUATTER UPGRADING AND THE SITE AND SERVICE SCHEMES	6
ACCESSIBILITY OF FORMAL HOUSING BY LOW INCOME GROUPS	6
CONSTRAINTS IN HUMAN SETTLEMENTS	6
ACTORS IN THE INFORMAL SETTLEMENTS	7
<i>Tenants</i>	7
<i>Resident structure owners</i>	7
<i>Non resident structure owners</i>	7
<i>Owners of land</i>	8
<i>Government institutions</i>	8
<i>City Councils:</i>	8
<i>Civil Society Organizations:</i>	8
ENVIRONMENTAL CONCERNS IN HUMAN SETTLEMENTS	8
CHARACTERISTICS OF INFORMAL/FORMAL HUMAN SETTLEMENTS	8
<i>High population densities</i>	8
<i>Poor sanitation facilities</i>	9
<i>Water supply</i>	9
<i>Refuse disposal</i>	9
<i>Illegal extensions</i>	9
RECOMMENDATION ON THE WAY FORWARD	10
CONCLUSION	11
SUSTAINABLE ENERGY IN THE URBAN AND THE RURAL AREAS IN KENYA BETWEEN 1992 TO DATE.	11
GENERAL CONSIDERATIONS	11
PROCESS OF ENERGY POLICY FORMULATION	13
RATIONALISATION OF REGULATORY INSTITUTIONS AND RELATED INFRASTRUCTURE	13
<i>All energy regulators to share a common infrastructure</i>	14
<i>Integration of national energy policy with district and local government energy planning and service delivery</i>	14
<i>Establishment of District energy planning committees could be established on an evolutionary basis.</i>	14
<i>Solid waste management in the urban and the rural areas in Kenya</i>	14
<i>Minimizing Wastes</i>	14
<i>Maximizing environmentally sound waste reuse and recycling</i>	15
<i>Promoting environmentally sound waste and disposal treatment</i>	15
<i>Extending Waste Services Coverage</i>	15
<i>Solid Waste Policy</i>	15
SUSTAINABLE WASTE MANAGEMENT FOR AFRICAN COUNTRIES	16
THE PLASTICS MENACE IN KENYA	16
<i>Plastic Bag Regulations</i>	16
<i>Solid waste examples</i>	16
COMPOSTING AND URBAN AGRICULTURE - PRODUCE COMPOST FROM ORGANIC WASTE	17
<i>Composting of solid waste</i>	17
REVIEW OF THE NATIONAL TRANSPORT POLICY FOR KENYA	17
<i>The Overarching Framework for Transport Policy</i>	17

<i>Customer imperatives</i>	18
<i>Overall, the quality, reliability, safety, security and speed of transporting goods and people will be improved.</i>	18
<i>Meeting investment criteria</i>	19
<i>Integration</i>	19
<i>Institutional Issues</i>	19
<i>Government Bodies</i>	20
POLICY OPTIONS AND PROPOSALS	20
KEY POLICY AREAS	20
<i>Land use and spatial development in support of land passenger transport</i>	20
<i>Framework for Provision of Services</i>	20
KEY RECOMMENDATIONS	20
<i>Funding</i>	20
<i>Energy efficiency and environment</i>	20
<i>Comprehensive integrated planning</i>	21
<i>Road Traffic control</i>	21
<i>Recommendations for improved transport policy</i>	21
<i>Improvement of road user knowledge, skills and attitudes</i>	21
<i>Transport Infrastructure</i>	21
<i>Foster a sound financial base for transportation infrastructure</i>	21
BIBLIOGRAPHY	22

Executive Summary

The urbanization of poverty is one of the most challenging problems facing Kenya today. Globalization accentuates this phenomenon because a highly educated and upper income urban population monopolizes the opportunities it offers. The commercialization and internationalization of agricultural production is also transforming the economy's key areas for the country from one based on smallholdings and intensive agriculture into capital intensive and specialized activities. This intensifies the exodus of the rural population to urban areas in search of an alternative livelihood. Most of the urban areas in Kenya are faced with a triple challenge caused by sustained population growth, a population that needs shelter and services but whose income is insufficient, and a diminishing ratio of resources per inhabitant, compounded by a weakened support role of the government and inadequate revenue base, and poor institutional capacity for planning and management.

The other main challenge facing the country is to address the two themes of the outcome of the second United Nations Conference on Human Settlements (Habitat II): "Adequate shelter for all" and "Sustainable human settlements development in an urbanizing world". Human beings were recognized to be at the centre of concerns for sustainable development, including adequate shelter for all and sustainable human settlements and they are entitled to a healthy and productive life in harmony with nature.

The government is committed to addressing the above situation by its commitment in developing the Kenya National Housing Policy whose major thrust is a deliberate strategic focus in slum upgrading, urban low-cost housing, urban middle-cost housing and poverty alleviation. Indeed this is being done in the broader context of implementing the global campaign on secure tenure and good governance through the local government reform strategy.

Sustainable Energy

The challenge ahead will require adequate, predictable, new and additional financial resources, in accordance with chapter 33 of Agenda 21 and paragraphs 76 to 87 of the Programme for the Further Implementation of Agenda 21, technology transfer, and, where appropriate, political will, as well as commitment to innovative ways of applying energy efficient, environmentally sound, and cost-effective technologies and systems to all sectors of the economy. In order to make energy systems supportive of sustainable development objectives, contributions from all stakeholders, as well as increased investments, will be needed. Energy for sustainable development can be achieved by providing universal access to a cost-effective mix of energy resources compatible with the country's different needs and requirements. This should include giving a greater share of the energy mix to renewable energies, improving energy efficiency and greater reliance on advanced energy technologies, including fossil fuel technologies. Policies relating to energy for sustainable development intended to promote these objectives for Kenya will require to address many of the issues of economic and social development as well as facilitate the responsible management of environmental resources

The main challenges for Kenya can be summed up as accessibility of energy, energy efficiency, renewable energy, advanced fossil fuels technologies, rural energy and energy and transport. In addition the other set of main concerns in this sector are strategies for a unified governance framework for the energy sector, rationalization of regulatory institutions and related infrastructure, and the lack of a national energy policy forum.

Sustainable Solid Waste Management

Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept, which presents a unique to reconcile development with environmental protection.

Accordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major related areas as follows: -

- a) Minimizing wastes;
- b) Maximizing environmentally sound waste reuse and recycling;

- c) Promoting environmentally sound waste disposal and treatment;
- d) Extending waste service coverage

Solid Waste Policy

A brief review of working papers on solid waste policy show that there is an urgent need to address the gaps in scholarly research for a deeper understanding of solid waste management

The situation with respect to waste management in Africa is particularly severe. The public sector in many countries as the situation in Kenya, is unable to deliver services effectively, regulation of the private sector is limited and illegal dumping of domestic and industrial waste is a common practice.

The Plastics Menace in Kenya

The collection and disposal of plastic bags is a growing problem in Kenya. The use and free availability of plastic bags has increased significantly in recent years and large amounts of bags have resulted in pollution and degradation of the environment. Thin non-reusable bags are indiscriminately dumped and not collected for recycling or disposal since they have little commercial value. The problem is severe in low-income areas where waste collection services are inadequate. There is need to draw up Plastic Bag Regulations for Prohibition on the supply of carry bags. The aim of the regulations should be to restrict the production of non-reusable plastic shopping bags and to promote re-use and recycling.

Sustainable Transport

The Kenya's transport vision can only be achieved through the sum of the actions of essential players. An essential ingredient to future success will be a vision for transport shared by all the essential role players, backed by co-ordinated and integrated planning and decision making.

A strong, focused, professional Ministry of Transport and Communication requires to play a role in co-ordinating transport policy, and developing and implementing strategies. This it should in practice be done in close co-operation with other government departments, other levels of government, and other stakeholders. In particular, there should be closer co-operation between transport and land-use planning.

Inter-modal co-ordination, co-operation and sharing of information should be encouraged in both infrastructure provision and operations to maximize customer service, decrease costs, and maximize social and economic return on investment.

The roles and responsibilities of the essential stakeholders and service providers should be clearly agreed. This will enable government regulation to be kept to a minimum, while the private sector will be able to build and operate within a competitive environment, be socially and environmentally responsible and self-regulating, and will be world-class transporters and transport service providers.

Institutional Issues

The structural arrangement of transport bodies is an essential element of transport policy and in turn can significantly affect transport policy proposals. As such institutional integration was identified as one of the essential thrusts to be addressed in a review of transport policy. Furthermore the proposals for the institutional framework for transport are also related to, and influence, the proposals for the restructuring of government transport assets.

Policy Options and Proposals

The policy options and proposals should be formulated to include the following areas: Operation and Control, Land passenger transport Land freight transport, Road traffic.

Key Policy Areas

Land use and transport development are not integrated owing to a fragmentation of responsibilities for the administration, planning and regulation of the various aspects of land use, infrastructure, operations and

regulations. This fragmentation has led to low density development, spatially dislocated settlements and urban sprawl, resulting in inordinately long commuting distances and times, low occupancy levels, high transport costs and low cost recovery. Current housing policy, which supports single units on single plots, will not achieve the densities required.

Key recommendations

The public passenger transport system in Kenya should be based on regulated competition. This implies competition for a route or network, and not competition on a route or network. The regulation should be in the form of a permission, contract or concession awarded in terms of a passenger transport plan and supported by strict law enforcement. There should be a fundamental shift away from monopolistic situations. There should also be a shift away from systems, which target commuters only towards one, which benefits all passengers?

Urban and particularly passenger transport have experienced low priority in national funding, apart from the subsidization of rail and bus services.

Specific funding issues which have arisen include the following: the absence of dedicated funding sources for passenger transport; inadequate funds to ensure the implementation of long-term plans; the funding of public transport operations through multiple sources and channels; the imbalance between spending on infrastructure and operations.

The use of more energy efficient and less pollutant modes of transport must be promoted.

The use of more energy efficient technologies in transport must be promoted through incentives/disincentives.

It is essential for public passenger transport planning to be carried out in an integrated fashion covering all modes. This planning should be done at as low a level as possible and by the relevant transport authority. Independent planning by modal operators, such as the rail mode, must be discouraged since the passenger transport plan must be holistic and cover all modes.

Traffic control (law enforcement) is identified as a traffic management priority, due to a severe breakdown in discipline on the roads, which in turn leads to unsafe conditions, damage to the road infrastructure, etc. The lack of discipline can only be rectified through strong pro- and reactive control actions. The effectiveness of the traffic control function must be improved substantially.

The level of professionalism of the traffic control profession should be enhanced to improve the image of the profession among members of the public, and to ensure adequate standards and levels of service.

A solution of road traffic problems can only be reached if the need to focus on the human aspects of road traffic is fully recognized. The improvement of road user knowledge, skills and attitudes as a road traffic management function is targeted as a priority, due to the inadequate emphasis of this function in the past, and in view of the extreme importance of this function in achieving acceptable levels of road traffic quality.

It will not be possible to achieve the mission for transport infrastructure without appropriate funding sources. In general, current funding levels are inadequate.

Conclusion

The contents contained in this report present a general overview of the efforts undertaken to achieve sustainable human settlements, energy and transport and solid waste management in Kenya.

SUSTAINABLE HUMAN SETTLEMENTS

INTRODUCTION

The UN Conference on Environment and Development (UNCED), popularly known as the 'Earth Summit' held in 1992 in Rio De Janeiro in Brazil launched the idea of sustainable development to governments and communities, promoting the need for public participation and put forward a framework for tackling the varied problems of the worlds settlements in an integrated way.

Agenda 21 Chapter 7 of UNCED outlined overall objective of sustainable Human settlements as to improve the social, economic and environmental quality of human settlements and living and working environments of all people, in particular the urban and the rural poor. Such improvement should be based on technical cooperation activities, partnerships among the public, private and community sectors and participation in decision making process from the community groups and special interest groups such as women, indigenous people, the elderly and the disabled.

Access to safe and healthy shelter is essential to a person's physical, psychological, social and economic well being and should be fundamental part to national and international action. The right to adequate housing as basic human right is enshrined in the Universal Declaration of Human Rights and the International Covenant on Economic, Social and Cultural Rights.

A major global program to address this problem is in the global strategy for shelter to year 2000, adopted by the general assembly in December 1988 (resolution 43/181).

The objective is to achieve adequate shelter for rapidly growing populations and for the currently deprived urban and rural poor through an enabling approach to shelter development and improvement which is environmentally sound.

Priority areas within which National governments may draw their development strategies to achieve sustainable human settlements include -

- Provision of adequate shelter for all
- Improved human settlement management
- Promote integrated provision of environmental infrastructure- water, sanitation, drainage and solid waste management.

The Global Campaign for Secure Tenure forms part of Habitat's commitment to contribute to the emergence of a new urban paradigm. The extension of secure tenure is but one part of an integrated approach of improving the access of the urban poor not only to improved shelter and access to basic services, but also to informal and formal employment opportunities, as well as direct political representation. This reinforces and underlines the linkage between this Campaign, and the Global Campaign on Urban Governance.

Habitat and its partners will be arguing that, for the emergence of a new paradigm and the creation of a more hopeful future, the issue of political will is central. Indeed, the challenge of urban poverty, appalling living conditions and bad governance does not arise because of a failure to provide technical and workable solutions - it arises because of narrow political and economic priorities that are not based on addressing human needs in an equitable or sustainable manner.

The Global Campaign for Secure Tenure will, indeed, signal a new approach to the provision of affordable shelter by the United Nations Centre for Human Settlements (Habitat) and its partners. The Campaign, and the whole strategy, will take some time to properly implement, after an appropriate period of engagement with partners in different parts of the world.

The Campaign aims to put women, and the poor, at the centre of a long-term, sustainable shelter strategy. There is no magic in this, but it will require different behavior and new styles of operation, not least by Habitat and its United Nations partners. Instead of trying to anticipate these changes, and making grand promises that have yet

to be met, it may be more appropriate to start the process with good faith and sound intent, and move forward with interested partners. This Campaign is designed to take forward the promise and commitments that were made at Habitat II, to reinvigorate the Global Plan of Action, and provide practical mechanisms in assisting communities, city governments and the member states of the United Nations. The real challenge is to turn 'Adequate Shelter for All' from a rallying cry, into results: results that change the daily living conditions of the world's poor.

PROPOSED WORKING METHODOLOGY

This report is as a result of in-depth analysis of the existing reports on housing from the government, the private sector, civil society organizations and face to face interviews in the form of discussions with individuals both in the urban and in the rural areas.

THE SCOPE OF THE STUDY

This study focuses issues on human settlements, solid waste management, energy and transport in the urban and the rural areas in on the above four main topics in Kenya between 1992 to date. This is done as an attempt to review and appraise achievements by the Government to implement the Rio Commitments as outlined in UNICED Agenda 21, chapter 7 on sustainable human settlements and Chapter 21 on Solid Waste management and Sewage Related Issues and the main Chapter on Sustainable Energy and Transport.

REVIEW OF THE NATIONAL HOUSING POLICY IN KENYA

This has been done to establish the areas and the extent to which government national housing policy is significantly focused on issues relating to human settlement in the country. Both the 1997 and the 2001 National Housing Policies were reviewed suitable for this study.

THE HOUSING POLICY FOR KENYA

The National Housing Policy for Kenya states that improving housing for the country's population is a concern of the Government. This concern has been influenced by the fact that well planned housing and infrastructure of acceptable standards and affordable costs when combined with essential services affords dignity, security and privacy to the individual, the family and the community as a whole. Besides this social function, housing as a whole is an investment good contributing both directly and indirectly to employment generation, raising of incomes, improved health and increased productivity of the labour force.

The Government's long objective has been to move towards a situation where every individual or family lives in decent affordable housing whether publicly or privately provided that meets the necessary requirements of security, health and privacy.

Objectives of the Housing Policy

The basic objectives of the policy are:

- To ensure an enabling environment for provision of housing both at the private and the public sectors
- To assist the low income in housing creation and improvement
- To encourage the use of locally available appropriate building materials and technologies
- To provide and improve infrastructural facilities in both the rural and the urban areas hence improve environment of the human settlements.
- To mobilize resources in order to facilitate expansion of investment in housing
- To set aside land for housing development in the urban areas where the problem of housing is most acute
- To alleviate poverty and create employment among the poor

Goals of the Housing Policy

According to the Government Housing Policy papers (1997/2001) the goals of the housing policy are set to be achieved in the next 20 years period and are outlined as: -

- To provide the minimum level of basic infrastructure related to health (water reticulation, roads and footpaths, drainage and recreational facilities)
- To set up the production of dwelling units in the urban areas where the main problem is that of acute shortfall in the number of dwelling units.
- To improve the rural living environment by promoting appropriate technology, appropriate devices and any other activities that would be sustainable in the total framework of development.
- To improve the existing stock of houses.

The Elements of the Housing Policy

The main elements of the Housing Policy are: -

- a) Housing standards and regulations
- b) Urban Housing
- c) Rural Housing
- d) Disadvantaged Groups
- e) Infrastructure
- f) Finance for housing
- g) The role of the government, private sector and community in general

Although the Government has committed itself to deal with the above issues, it is observable that not much has been achieved in addressing the needs of the people in respect to what the policy says regarding the above concerns.

In the Urban Housing for example, which is a major concern in Kenya, the policy says that the rate of urbanization being experienced in the country has caused a myriad of problems, the most critical being the general lowering of living standards of an increasing majority of urban dwellers. The Policy states that the Government is committed to alleviating this situation through: -

- Slum upgrading
- Urban-low cost housing
- Urban middle cost housing
- Poverty alleviation

However, although the policy says that upgrading of the slum areas will be done in strict consideration of the people (with minimal displacement) upgrading has been left more in the hands of the local authorities/private housing developers who have actually caused massive destruction of informal settlements and have caused displacements of people most of whom have been exposed to unbearable housing problems. Examples are within the recently experienced housing skirmishes in the slum areas of Kibera and the on-going demolition of unplanned shelter/structures in some of the urban areas in the country e.g. in Nairobi and Mombasa. (Nation 2001)

Demolition of these structures have deprived many people of their only means of income generation contrary to the government policy to support activities aimed at poverty alleviation. Within the rural housing, the policy says that GOK will promote a sustainable process of shelter improvement and maintenance through mobilizing finance for human settlement development at both the individual and institutional level. This will be achieved by increasing rural incomes (to alleviate rural poverty) and by introduction of rural industry and establishment of non-agricultural enterprises.

The communities will also be assisted to start innovative ways of mobilizing savings by involving rural based non-governmental organizations.

The situation in the rural areas is not different from that in the urban areas. Many families continue to live in sub-standard housing structures and environments. The rural poverty compounded by increasing poverty due to lack of incomes and a clear government interventions to deal with poverty, has made it impossible for the communities to access finances to improve the housing conditions. The few non- governmental organizations with shelter programmes like the Shelter Forum, ActionAid Kenya and Approtech Limited have also not been able to effectively meet the housing needs of the people due to insufficient resources compared to the needs.

Finance for housing

The policy states that the government places more emphasis on formal private sector to produce housing, financing and delivery while the government role will be to provide an enabling environment. Funds from the central government will however be utilized to provide low and medium cost housing, slum improvement programmes and support rural housing improvements. The private sector will cater for high cost housing with the government performing those roles the private sector cannot do such as provision of infrastructure and land use planning.

The situation as regards finance for housing is that mortgage lending by formal financial institutions is targeted mainly to the middle and high-income households. The needs of the low-income earners and rural people concerning borrowing have not been adequately addressed. Most Commercial Banks and non-banking financial institutions are restricted in investing in housing by the provision in the Banking Act. Again, budgetary allocation through the exchequer including the rural housing loans have not only been inadequate but also declining. Various Acts require harmonizing to facilitate increased and effective shelter production and delivery mechanism (Banking Act/Building Societies Act. Harmonization of the legal regime is a major constraint in housing.

The role of the community in Housing

The government policy is to create conditions favourable to both men and women in exercising their rights and responsibilities through effective participation in housing. The conditions should cater for all vulnerable groups. The government in collaboration with community based organizations; the private sector and non-governmental organizations aims to encourage various shelter-related activities (in the slums and in the rural areas) through preferential allotment of land, access to finance and fiscal support. NGOs and CBOs will be assisted to give their support in this area. The policy states that Cooperatives will serve as vehicles for financing for housing as has been demonstrated by the National Housing Cooperative Union (NACHU).

SITUATIONAL ANALYSIS IN KENYA SINCE 1992:

The Urbanization Phenomenon

Urbanization is the most significant occurrence of our time. The current worldwide rate of urbanization in Africa is about 1.6%(UNCHS-Habitat, 2001). Nearly all cities continue to grow in absolute terms. This phenomenon represents a massive shift of population from rural to urban areas. It is a recent phenomenon in many developing countries, exceptions may be only a few countries. Rogers and Williams (1982) state that the urbanization currently taking place in the developing countries is a structural transformation from predominantly agricultural to industrial service economy. It is estimated (UN World urbanization prospects1999) that sub-Saharan Africa's urban population will approach 440million (46%) of its projected 952 million by 2020.

Berghal (1995) has documented a number of major and minor causes of urbanization in Africa, which among others include: -

- Population density in the rural areas pushes the landless and the under employed out;
- Availability of more jobs and higher incomes in the urban areas

- The educated and the skilled inclined more to the urban areas for better income opportunities
- More population growth rates in the urban areas due to better facilities including health care facilities.

There are many reasons why many people are moving into the urban areas. However, the main reason has been the perception that the urban areas are potential sources of employment for those who move into them. However, this has not necessarily been the case. The situation in Africa south of the Sahara continues to present the picture observed by Syagga (1994) that:

“--Although the current rate of urbanization is much lower in Africa compared with other continents, Africa has been forced to urbanize and house more people with a shorter time-span than any of the other continents in their urbanization histories. This creates not only not only immediate problems but also urgent long term economic, social and ecological concerns”. —

Available data shows that Africa does not seem to have reaped the benefits accruing from urbanization, such that the GDP does not seem to have grown with increased urbanization.

EVOLUTION OF HUMAN SETTLEMENTS

The evolution of human settlements policy for the country can generally be categorized into two broad phases; pre-post war and the post independence phases. The major intervention strategies adopted were the public highly subsidized conventional housing prevalent during the first phase and the aided self- help and enabling environment strategies of the later years of independence to the present.

Human settlement problems in the main urban areas in Kenya can be traced as early as the 1920s, when almost all Africans lived in unregulated settlements due to the colonial segregated policies (NACHU, 1990). The physical development of these urban areas was based on model of garden city plan. Further more, the colonial government had a policy to control the African urban population, which according to Stren (1978) was mainly driven by: -

- The desire to keep the African wages low.
- To segregate the African living quarters from the European residential areas.
- To ensure that a reasonable standard of public health among Africans was realized in order to prevent the spread of infectious diseases and
- Discouraged the provision of large-scale public housing so as to curtail the excessive influx of the Africans into the city.

The above was realized through the stratification of human settlements along racial basis. The Africans were condemned to living in the densely populated areas in the urban areas (in Nairobi for example, Africans lived in the Eastlands and the south of the city. Indeed to date, there exists some level of racial compartmentalization. Since independence, further segregation has been along socio-economic considerations.

The first housing ordinance was enacted in 1943, after a commission was set to look into the housing situation for the Africans. The city council was to provide housing for the low-income groups, who were mainly Africans and a recommendation was made to establish a Central Housing Board and a special fund to make loans available to local authorities. It also urged that Africans be allowed to build villages in towns even with temporary materials.

By the time of independence in 1963, over 44% of the employees in the urban areas lived in employer housing. After independence, a more extensive housing policy was provided in the Sessional paper No.5 of 1965/66. It emphasized on basic standards of health, security and privacy. The government signaled its intention to move away from bed-spaces to decent housing. The Housing Finance Company of Kenya was set up. Unfortunately, since that time, HFCK has only catered for medium and high-income groups. The National Housing Co-operation was set up to replace the Central Housing Board. NHC was set up as the government agency for channeling public funds to local authorities for the development of low cost housing (Gitau and Macoloo 2000).

Unfortunately, even with the government and local authorities efforts to provide shelter, the strategies failed to provide shelter in adequate volumes at prices the poor could afford. Moreover, there was a more influx of people to urban areas thereby increasing pressure for low cost housing.

The majority of the immigrants could not secure formal employment. They could only live in irregular/informal settlements such as Mathare, Kibera and Korogocho that were estimated to hold 38% of Nairobi's population in 1980 (Macharia 1992)

In Nairobi in the year 2000, for example, 112,000 units per year were required where the production of housing was only 20-30,000 units, giving a shortfall of 80,000 units (Sessional paper on housing 1997).

SQUATTER UPGRADING AND THE SITE AND SERVICE SCHEMES

The squatter upgrading programs and the site and service schemes were encouraged in Kenya by the international donor agencies, drawing on experiences of other developing countries. The emphasis into the development of these schemes was to use a considerable amount of self-help and therefore reduce the financial burden of the GOK. The emphasis here was self-housing and community development strategies.

The 1984-1988 Development plan stated that 30% of low-income housing was to be provided through site and service schemes and squatter upgrading projects. These strategies entailed a stronger focus on the urban poor with a commitment to provide low cost housing.

From the 1980s the role of the government in the provision of housing changed to that of the enabler, thus in 1987, the declared year of shelter for the homeless, resulted in the GOK role changing into that of facilitating the development of housing by private entities charging market prices.

Despite all these attempts in government policy, nothing much has been achieved. There is no clear government policy on housing. The 2001 policy is still in draft form.

ACCESSIBILITY OF FORMAL HOUSING BY LOW INCOME GROUPS

The Nairobi City Council (NCC) has been unable to provide the needed housing units. Other urban authorities too are unable to meet the housing needs of the people, especially the urban poor. The other low-income developers in the formal sectors have failed to develop houses in the needed volume and at prices the poor can afford. Moreover, the middle income groups, not targeted by NCC and government housing programmes have completely infiltrated the low cost housing.

Informal housing for profits and not as a solution to shelter is increasing in all informal settlements in the urban areas. Informal rental housing is at large- scale. The majority of the slum dwellers are tenants as has been revealed by this research in Mathare, Kibera, and Korogocho.

A study carried out in 1994 in Mathare (Yahya and Nzioki, 1994) revealed that housing companies in that slum represented the first large-scale intervention of the private sector in housing.

Over time, the private sector involvement has branched out into individuals who are interested in the profits rather than shelter provision. Since the demand for housing is determined by the rents/prices of the houses, and a large proportion of the people being poor in Nairobi, the houses that they can afford are in the informal settlements.

This means that demand for housing in urban areas for the low- income groups is not met.

The 1992 tribal clashes fuelled the growth of most informal settlements especially in Nairobi and to a certain extent in other places e.g. Mombasa, Kiambu and Thika.

CONSTRAINTS IN HUMAN SETTLEMENTS

It is evident that the problem of housing, especially in the urban areas of Kenya cannot be solved if the core problems are not properly addressed.

The major problems facing the low-income groups emanates from a number of factors. The formal shelter projects have not catered for the majority in this country. The poor have not been able to access shelter in the formal market due to their low incomes, high interest rates for mortgages and other conditions set by financial institutions which are not favorable to those willing to go into low cost shelter development.

In addition, the middle income groups shelter needs are not met making them compete with the poor for the few houses targeting the poor.

Other problems facing sustainable human settlements include: -

- Shortage of serviced land for residential housing development
- High cost of building, hence high prices of houses which have gone beyond affordable limits by the majority of people. This has led to the development of informal settlements including slums.
- Lack of co-ordination-especially in spatial, design, and land use patterns.
- Lack of control in the standards of accommodation due to compromised designs.
- Small and isolated housing clusters.
- Accommodation of highly compromised structural safety.
- The overexploitation of plots and development of high-density settlements by way of flats.
- Rampant insecurity
- Lack of and dilapidated existing municipal services especially water, roads and sewers etc

ACTORS IN THE INFORMAL SETTLEMENTS

Although informal settlements were recognized and supported by the government for many years, they have attracted attention of a number of interest groups-Government institutions, civil society organizations, private organizations and donor agencies. Varied interests in any upcoming upgrading project needs understanding, at both at the planning and implementation stages. These interest groups/stakeholders include: -

Tenants

Whose interests are houses at an affordable rent irrespective of the capacity of available infrastructure and services. As a result, they have accommodation whose quality and tenure is not their main concern, until a land dispute arises. In such cases, they either move out, or are evicted or the housing units are burnt down to give way to new tenants or improved development .In this case, tenants are most disadvantaged.

Resident structure owners

They are not so much different from the tenants in terms of the income they receive. The level of income earned depends on the type and the number of structures they have developed. In some settlements where the structures are of polyphone/cardboard, one finds more structure owners than tenants. They are affected by the lack of infrastructure and services provision the same way as their tenants. They are exposed to poor sanitation and lack of toilet facilities and water no less than their tenants.

Non resident structure owners

This is the most difficult group to deal with in popular settlements. They remain little known and are forceful behind the scenes. Most of them have structure managers who keep them informed about their investment. This enables them to strategize and act accordingly. Most of them do not bother to provide services, toilets etc, their aim is to reap profits within the shortest period possible. Most of them are prominent public officials/personalities or very wealthy individuals.

Owners of land

Majority of settlements are located in public land or land that is inappropriate for housing development e.g. river banks, road reserves, dumping grounds, undeveloped public or private land laying empty. The owners of such land are powerful and can influence local authorities to evict informal settlement communities.

Government institutions

The most active arm of government within the informal settlements are the provincial administration. They view residents of informal settlements as ignorant citizens cum criminals who have to be manipulated. Many residents see them as only interested in harassing the poor so that they can be bribed. They collude with people who have interest in popular settlements. In many cases, chiefs are said to allocate land, using documents, which have no legal basis.

City Councils:

Are charged with provision and management of services within their jurisdictions. However, due to poor economic situation, rapid population growth, limited resources and poor management, their services have completely deteriorated in all the urban areas. City authorities have a lot of influence in what happens in an informal settlement. They can decide whether it stays or be demolished. They also influence the economic activities being undertaken within the settlements. It is usually city askaris who are used to demolish popular settlements. They are the ones who have the plans showing land use and ownership trends.

Civil Society Organizations:

They sprung up in response to State withdrawal from provision of services. They are watchdogs over actors who do not have the interest of the informal settlement communities at heart. Their support has managed to improve services for low-income households and communities. They are sometimes viewed by the government and local authorities as a threat to their power base.

Others concerned in human settlement issues are professional organizations, the private sector and donor institutions.

ENVIRONMENTAL CONCERNS IN HUMAN SETTLEMENTS

Location of the settlements may result in exposure to different types of pollution with implications on the quality of the settlements. In Nairobi for example, two sources of environmental harm occur from the Nairobi and Ngong rivers and the NCC dump sites near Dandora and Mukuru. The rivers are heavily polluted being convenient dumping sites for every thing including surgical wastes (UNCHS/GOK, 2001). This is done despite of the fact that down stream the water is used by house holds for even drinking and cooking.

Dandora and Mukuru dumpsites are located right in the middle of the settlements. The garbage dumps are perhaps the single biggest killer of residents of Korogocho, Kariobangi, Mukuru and other informal settlements in the urban areas. These sites spread their poison of smoke in much of the populated Eastlands in Nairobi, Bondeni area in Nakuru, Kwa Jomvu in Mombasa or Nyalenda or Manyatta in Kisumu.

In addition, the health of the people in settlements near the industries are affected by the pollution from these industries. Industries should be encouraged to participate in environmental protection instead of dumping their wastes without due consideration of the residential neighborhoods.

The method of sanitation through pit latrines adds to the pollution. Wastes from showers often go into the streams and rivers. Storm water drains and natural waterways often serve as the final disposal solution for bath waste water, human waste and solid waste ultimately ending up in nearby water bodies e.g. various Nairobi rivers making the water in some cases to turn septic.

CHARACTERISTICS OF INFORMAL/FORMAL HUMAN SETTLEMENTS

High population densities

The population per sq. area affects the rate of deterioration. In some cases, there have been 25 rooms in a plot measuring 8x25 metres where each room has on average 5 people (UNCHS/GOK 2001). In a few cases, people have been found to double up making the pressure higher. The units are so tightly packed up that the aged, the disabled and the sick have problems to move easily. The construction materials are not durable, hence easily worn out and the people get exposed to cold, wind and rain.

Poor sanitation facilities

Many informal settlements have few pit latrines. The few are used by so many people and yet they are so close to the habitable rooms. This has made the situation in the informal settlements so bad that people are helping themselves in any space around the areas. In General, 94% of population in the informal settlements lack sanitation facilities resulting into widespread health hazards.

Water supply

The major problem in the informal settlements is the unavailability, inadequacy, and unreliable or costly water from the vendors. A study carried out in 1992 revealed that 74.8% in the popular informal settlements (Kibera, Mathare, Kawangware, and Soweto) purchase water from the vendors while 20.5% have water through communal piping. Due to lack of adequate water, there has been outbreak of diseases leading to loses in lives in these settlements (UNCHS/GOK 2001).

Refuse disposal

Refuse disposal in the urban areas, especially in Nairobi continues to be one of the major failures of the councils. For many years, for example, Nairobi has failed to provide regular garbage collection to all areas of the city. The same is true and applicable to all other councils in the country. This has occurred despite the fact that service charges, rates and other levies are collected in order to enable the councils to undertake such services. In the informal settlements, there is no space for disposal and the burning of the garbage. These areas are littered with refuse and contaminated rotting waste every where.

Illegal extensions

The planned estates in Nairobi and in most of the urban areas in the country have deteriorated due to rampant construction of extensions in the plots and other spaces in the settlements e.g. play grounds and road reserves (UNCHS/GOK). This is an abuse and violation of the Kenya Building Code requirements. Most of the illegal extensions are constructed without regard of the originally approved building plans of the estates or the materials and disregard of standards of original workmanship of the original units.

The overall impact of these extensions has been, so to state, turn these formally planned settlements into slums. Some of the extensions are a threat to the residents and the neighboring structures. The other effect of these extensions is the overburdening of services and infrastructure, which had been originally planned for lower population densities per plot. The extensions put on open spaces have for example interfered with surface water drainage etc. This practice is widespread in almost all previously planned estates and areas in urban settings.

Sustainable human settlements and environmental concerns and management and the link between them are therefore of significance in rapidly growing cities/towns in the country. The quality of housing in the informal settlements coupled by the high densities result in rapid deterioration of the housing conditions. Congestion and overcrowding has resulted in overuse of the few services and facilities available which are rarely maintained or repaired. The increasing tempo of development seems to make the situation worse.

The Government and Local authorities should explore ways in which to provide services such as refuse collection even in the informal settlements.

There is need to understand the consequences of environmental impact in the informal settlements and specifically on the poor. This is what Agenda 21 says, to integrate environmental concerns into the social and economic development process. Shelter quality in the informal settlements must be integrated with the programs e.g. poverty eradication, public awareness campaigns on peoples contribution to deplorable shelter conditions and other environmental matters and concerns.

The failure of the councils to discharge their duties in environmental management has resulted in many private and neighborhood groups coming up, especially for garbage collection, security issues etc. These private initiatives are playing a crucial role in undertaking some of these services the councils have so badly failed to provide.

As there are constraints, shortcomings and disadvantages that emanate from the mismanagement of the environmental services, behavioral change is required among the public. This can only be possible through environmental awareness campaigns highlighting health impacts on the people and the need for peoples initiatives to control their own environment by themselves.

RECOMMENDATION ON THE WAY FORWARD

The Kenya government has put in place a national strategy and is reviewing institutional and legislative framework related to shelter development in the country. The country is addressing the issue of shelter in the context of a broader framework of economic development based on the notion that housing can be used to create economic wealth and employment. The government is also moving from the role of housing provider to that of a facilitator of public-private partnerships, and supporter of community based initiatives in the housing sector.

Housing finance institutions are still few in the country hence provisioning of small housing finance. The cost of mortgage finance continues to increase making borrowing out of reach for many people in the country.

The tremendous expansion of the informal settlements has caused major concern for the government and local authorities.

The government is in the process of reviewing the existing policies on housing to match the new challenges. However, co-ordination among institutions responsible for shelter sector, lack of capacity for the local authorities and community builders is being seen as a weakness in shelter delivery (UNCHS/GOK 2001).

This study recommends the following as important policy ingredients for a successful handling of sustainable human settlements:

(i) It is evident that problems of informal settlements especially in the urban areas in this country cannot be adequately addressed unless a good policy framework to adequately address issues of affordable land for housing the poor is put in place. Much remains to be done to establish well functioning land markets which can deliver land at reasonable prices. Assessing the constraints in land supply and putting in place coherent land development strategies that increase the supply of land should be an urgent task for the government.

(ii) Development of shelter both in the urban and in the rural areas, and the issue of informal settlements needs to be urgently addressed. Most urban and rural areas in Kenya are strewn with sub-standard housing while most urban populations live in slums and informal settlements. There is urgent need to look for ways of upgrading slums without unnecessary displacement of people and to strategize on the development of low cost housing for the middle-income earners, including rental housing in the urban areas.

(iii) More than 85% of the urban dwellers in this country, as indeed in most developing countries, live in inadequate housing, mostly in the sprawling slums (e.g.-Kibera, Mathare, Mukuru, Kariobangi, Dandora) and squatter settlements. Such areas are regarded as one of the most visible expressions of human poverty. Lack of adequate housing in the urban areas, especially in the cities, is one of the most pressing problems in the 21st century. Globalization of the world economy presents opportunities and challenges for the development process as well as risks and uncertainties

iv) This research has shown that there exists a wide disparity of services provided to urban and peri-urban settlements in the country. Sanitation and waste management seriously falls well behind water supply in most urban centers. There is a continued neglect of surface drainage and inadequate transport services which fail to meet the needs of the urban poor. All these are pose a wide range of challenges that call for urgent integration of all basic services into the overall urban planning in the country. The key policy objectives should focus on the main areas of concern, which must, be to: -

- i) Improve effectiveness in service delivery
- ii) Improve efficiency and;
- iii) Improve on equity and sustainability in service delivery.

(v) Although some effort is being put, there is great need to improve the rehabilitation of existing infrastructure and services in addition to adding new services. The demand for services due to the current population pressure in the urban areas, especially in Nairobi, Mombasa and Kisumu will continue to raise serious concerns.

vi) Transport and clean water for example are some of the problems that continue to be experienced and where the government and the local authorities need to concentrate their efforts. Effective government control is necessary to ensure that poor neighborhoods are not neglected in the delivery of services.

vii) A strong political commitment, transparency in management and sound strategies will be needed to attract more private sector investment and risk taking in urban services.

viii) Community participation in the provision and management of urban services will also go along way is towards long-term sustainability of services. Policies and programs should aim at building capacity for effective community participation in the planning, provision and management of infrastructure and services. Neighborhoods Associations are a good example of what communities' can do to provide services for them. The Nairobi Central Business District Association among others is a good initiative by people to provide for themselves services that would otherwise be difficult to sufficiently get from the government or local authority.

CONCLUSION

Adequate and affordable basic services for the poor are central to promoting environmentally sustainable healthy and liveable human settlements. The urban and the rural poor in Kenya continue to face problems in housing, clean water supply, sanitation, solid waste management and transport. Since Rio in 1992, the government goal to reach solutions to the above problems has remained a distant reality.

Rapid urban growth has outpaced the capacity of the government and the local authorities in the country to provide adequate and maintain basic services. The results have been and continue to be lowering of the quality of life for many people, increased burden of health care, and unmitigated environmental pollution. Slums and squatter settlements continue to grow at alarming rates. Low-income households are rapidly increasing especially in Nairobi, Mombasa and other urban centers in the country and people are living in the most polluted and inaccessible areas frequently contaminated with solid waste. With uncertain or illegal land tenure, these low income, high-density settlements lack the most basic infrastructure and services.

It would be every ones desire to see the government and other stakeholders coming up with strategies to effectively tackle issues on human settlements that for along time now have so much affected the lives and welfare of the so many low income groups in this country. The main responsibility of the government should, after all, be that protecting its citizens: their interests and general welfare.

SUSTAINABLE ENERGY IN THE URBAN AND THE RURAL AREAS IN KENYA BETWEEN 1992 TO DATE.

Energy services are necessary to fulfil basic needs such as cooking, warmth and light, and as an input to productive economic sectors such as industry, mining, agriculture and transport. Energy is therefore central to achieving the goals of sustainable development.

Because of its importance to human needs satisfaction, the economy, and its effect on natural environment, it is important that the energy system is properly governed. For this, an understanding of the energy position in Kenya between 1992 to date is important.

GENERAL CONSIDERATIONS

The report revealed and took into consideration the following facts.

1. The scale of energy needs facing the country today in relation to sustainable development can be gauged by the fact that nearly one third of the global population, mostly living in the developing countries continue to lack access to energy (United Nations Commission on Sustainable Development: Decision 9/1 on Energy April 2001).
2. Wide disparities in the levels of energy consumption within and between developed and developing countries exist. In Kenya, current patterns of energy production, distribution and utilization are unsustainable.
3. Energy needs challenges in the country require adequate, predictable, new and additional financial resources. Political will and commitment to innovative ways of applying energy efficient, environmentally sound and cost effective technologies and systems to all sectors of the economy are necessary. This calls for considerable efforts and substantial investments, including from the private sector.

4 In order to make energy systems more supportive of sustainable development objectives, contributions from all stakeholders, as well as increased investments, will be needed.

5. Financial resources play a key role in the implementation of policies on energy development in the developing countries. Overseas development Assistance (ODA) is a main source of external funding. Substantial new and additional funding to the country is required.

Policy issues and options: In our research to establish the current position on sustainable energy, policy issues and options were grouped under the following areas: energy governance, demand sub sectors, energy supply sub-sectors and cross-cutting themes including environment, energy efficiency, research and human resources.

The main challenges can be summed up for the country as: Accessibility of Energy Access to energy is crucial to economic and social development and eradication of poverty. Improving accessibility of energy implies finding ways and means by which energy services can be delivered reliably, affordably, in an economically viable, socially acceptable, and environmentally sound manner.

Energy Efficiency Energy efficiency can be a win-win solution both for developed and developing countries, but currently energy efficiency has not reached its potential. Barriers to optimising the energy efficiency potential involve lack of access to technology, capacity building, and financial resources, as well as market related and institutional issues.

Renewable Energy The main challenge lies both for the country in the development, utilisation, and dissemination of renewable energy technologies, such as solar, wind, ocean, wave, geothermal, biomass, and hydro power, on a scale wide enough to significantly contribute to energy for sustainable development. Despite some progress in promoting renewable energy applications in recent years, inter alia, through the implementation of the World Solar Programme 1996-2005, numerous constraints and barriers including costs continue to exist.

Advanced Fossil Fuels Technologies. Given that fossil fuels will continue to play a dominant role in the energy mix in the decades to come, the deployment and use of advanced and cleaner fossil fuel technologies should be increased. More efforts should go into supporting the further development and dissemination of those technologies.

Rural Energy To implement the goal accepted by the international community to halve the proportion of people living on less than US\$ 1 per day by 2015, access to affordable energy services is a prerequisite. Efforts at finding the most appropriate solution to the energy problems of rural areas are hampered by the enormity of the problem, limited availability of resources and lack of appropriate technologies, high investment cost and connection fees, as well as insufficient attention to rural development in general. An effective strategy to address the energy needs of rural populations can be to promote the climbing of the energy ladder. This implies both improving ways of using biomass as well as moving from simple biomass fuels to the most convenient efficient form of energy appropriate to the task at hand, usually liquid or gaseous fuels for cooking and heating and electricity for most other uses.

Energy and Transport: The transport sector is a major energy consuming sector and it is the sector for which energy consumption is projected to grow at the highest rate. The challenge is to promote an integrated approach to developing transport systems for sustainable development.

Energy governance: In the area of Energy governance in Kenya the topics considered were the overall energy governance roles, functions and institutions, governance of individual energy subsectors, integrated energy planning and the resourcing of energy governance. Policy issues and options were raised which seek to clarify the functions of different institutions within the governance structure.

Issues requiring clarity regarding the functioning of the Kenyan energy governance system include: a unified governance framework; the various processes by which energy policy may be formulated; organisation and rationalisation of regulatory institutions; integration of national energy policy with district and local government energy planning and service delivery; and local participation in energy needs identification, planning and implementation.

Our analysis in the various documents has indicated the pervasive role of the state in the energy sector. Various legislative acts define the state's functions in particular sectors, while in others this role has never been formally

defined. There is room for a bold, incisive move to enact an overall consolidating Energy Act, which would provide a vision for the energy sector and define an overall governance and regulatory framework.

A consolidated energy act could establish a clear vision and framework for the governance of the energy sector, clarify institutional roles and specify various policy formulation aims. This intervention should streamline the role of the state in the governance of the energy sector and improve the effectiveness of the operation of the various institutions concerned with energy governance.

PROCESS OF ENERGY POLICY FORMULATION

Perhaps the most fundamental issue is the process by which energy policy is formulated. Past government practice in formulating energy policy has tended to be non-transparent, non-inclusive and often secretive. Recent pressures for an opening up of the policy formulation process have resulted in the formation of various forums, which have tended to operate on much more transparent and inclusive lines. The success of these forums, in terms of efficiency and effectiveness, in contributing to the process of energy policy formulation has yet to be fully assessed.

There can be little doubt, however, that the ethos of energy policy formulation has undergone a radical change from the past. The question facing the government and the energy community at this point is how best to institutionalize the process of policy formulation in a manner which retains the positive aspects of the new ethos and also ensures effective processes in the future which minimize the use of scarce resources and organisational time. This can take the form of one of the following:

- i. Involve the Parliamentary Committee on Energy Affairs in the development of policy and build on the existing trend for the Committee to become more involved in policy issues.
- ii) Delegate responsibility for the development of policy for particular energy subsectors to appropriately constituted and mandated councils
- iii) Formulate energy policy through an interdepartmental committee of senior officials A permanent committee would force officials, and departments, to think less along sectoral lines and the power to formulate, and even implement, policy options would be in the hands of experts. However, such a committee would not be particularly accountable to the public and there would be no structural involvement of stakeholders. The current capacity of many departments is also limited.
- iv) Establish a National Energy Policy Forum (NEPF) The role of the NEPF will be to advise government on energy policy options developed based on an integrated energy-planning framework, taking into account national and economic goals within a long-term perspective. Assuming that the establishment of the forum is accompanied by development of the country's energy policy research capacity, well formulated policies from the NEPF could result in significant economic benefits, given the size and importance of the country's energy sector and the current lack of integrated energy planning activities.

RATIONALISATION OF REGULATORY INSTITUTIONS AND RELATED INFRASTRUCTURE

A number of developments around energy regulation point to the need for a thorough examination of the future of energy regulatory institutions and their associated infrastructures. The establishment of the Electricity Regulatory Board (ERB) and its empowerment to regulate the entire electricity industry will require the rapid establishment of a suitable support capacity for the ERB.

Some of the benefits being experienced after the creation of a single energy regulator responsible for regulating specific energy subsector includes among others the advantage of being able to develop a holistic perspective of the National energy sector. This should not only improve its regulatory action but also enable it to provide valuable inputs to policy makers once it identifies problems requiring corrective policies. A single energy regulator should also be able to attract and retain the highly skilled professional support staff that smaller scale regulators find difficulty in acquiring. A single regulator should also benefit from economies of scale deriving from the use of a single infrastructure, rather than the state having to provide for multiple infrastructures required by multiple regulatory agencies.

All energy regulators to share a common infrastructure

A common infrastructure may be created, including database, administration, accounting, legal, and technical and public relations resources, which could support several regulators, whether they be boards or appointed individuals. This infrastructure may be established within the Civil Service, such as within the Ministry Energy , or in an external state owned company, such as the Ken Gen, or even within the private sector.

The costs of maintaining regulatory support infrastructure should be reduced and regulators should be able to attract better staff. Although the various energy regulators would operate under different Acts, the potential for development of a more holistic approach to energy regulation would be enhanced.

Integration of national energy policy with district and local government energy planning and service delivery

At present there is a vacuum within the emerging district and local governments with respect to, inter alia, energy planning. At the local level it is apparent that communities have already articulated their energy needs as well as their needs for other basic services such as water through the just concluded PRSPs. The lag in developing local government to the point where it can fulfil its intended role may mean that community forums are an appropriate interim measure.

The fuels will probably have to be treated differently. Biomass is inevitably a local issue because of transport limitations, but electricity will have to have strong national dimensions because of national transmission networks.

Establishment of District energy planning committees could be established on an evolutionary basis.

These committees could facilitate liaison within districts on energy needs, prioritization and the dissemination of information and advice as to how to meet these needs. This would be undertaken within an integrated energy planning framework to guide the forward planning of individual energy providers such as Ken Gen, oil companies and also local government departments involved in service delivery such as housing, water, health, agriculture and forestry. They could be based on, or linked to, rural development and interdepartmental committees that already exist. Potential disadvantages are that they may not be responsive to local interests, may duplicate the efforts of a national energy policy forum or may duplicate the work of broader provincial development and economic coordination committees and forums. Linkages would need to be established with other forums to avoid duplication of responsibility.

Solid waste management in the urban and the rural areas in Kenya

Solid wastes in its definition include all domestic refuse and non-hazardous wastes such as commercial and institutional wastes, street sweepings and construction debris. In some countries, this solid waste management system also handles human waste such as night soil, ashes from incinerators, septic tank sludge and sludge from sewage treatment plants. If these wastes manifest hazardous characteristics, they should be treated as hazardous wastes.

Environmentally sound waste management must go beyond the mere safe disposal or recovery of wastes that are generated and seek to address the root cause of the problem by attempting to change unsustainable patterns of production and consumption. This implies the application of the integrated life cycle management concept, which presents a unique mix to reconcile development with environmental protection.

Accordingly, the framework for requisite action should be founded on a hierarchy of objectives and focused on the four major related program areas as follows: -

- e) Minimizing wastes;
- f) Maximizing environmentally sound waste reuse and recycling;
- g) Promoting environmentally sound waste disposal and treatment;
- h) Extending waste service coverage.

Minimizing Wastes

Unsustainable patterns of production and consumption are increasing the quantities and variety of environmentally persistent wastes at unprecedented rates. The trend could significantly increase the quantities of

wastes produced four to five fold by the year 2025 (Global Environmental Outlook (GEO 2000) A preventive waste management approach focused on changes in lifestyles and production and consumption patterns offers the best chance for reversing current trends.

Maximizing environmentally sound waste reuse and recycling

The exhaustion of traditional disposal sites, stricter environmental control controls governing waste disposal and increasing quantities of more persistent wastes, particularly in industrial countries have all contributed to a rapid increase in the cost of waste disposal services. Costs could double or triple by the end of the decade. Some current disposal practices pose a threat to the environment. As the economics of waste disposal services change, waste recycling and resource recovery are becoming increasingly cost effective. Future waste management programmes should take maximum advantage of resource-efficient approaches to control the wastes. These activities should be carried out in conjunction with public education programmes. It is important that markets for products from re-claimed materials be identified in the development of re-use and recycling programmes.

Promoting environmentally sound waste and disposal treatment

Even when wastes are minimized some wastes will remain. Even after treatment, all discharges of wastes have some residual impact on the receiving environment. Consequently, there is scope for improving waste treatment and disposal practices such as avoiding discharge of sludges at sea. In developing countries the problem is of a more fundamental nature: less than 10 percent of urban waste receive some form of treatment and only a small proportion of treatment is in compliance with any acceptable quality standards. Faecal matter treatment and disposal should be accorded due priority given the potential threat of faeces to human health.

Extending Waste Services Coverage

By the end of the century, over 2 billion people will be without access to basic sanitation, and an estimated half of the urban population in the developing countries will be without adequate solid waste disposal services. As many as 5.2 billion people, including 4 million children under the age of five years of age, die each year from waste related diseases. The health impacts are particularly severe for the urban poor. The health and environmental impacts of inadequate waste management however go beyond the unserved settlements themselves and result in water, land and air contamination and pollution over a wider area. Extending and improving waste collection and safe disposal services are crucial to gaining control over this form of pollution

Solid Waste Policy

A brief review of working papers on solid waste policy show that there is to urgent need to address the gaps in scholarly research for a deeper understanding of solid waste management. Studies by Schall (1992) indicate that managing waste has effect on both the solid waste system and the production system (i.e., industries that extract raw materials and manufacture products and packages). He shows that source reduction produces significant cost savings for the solid waste management system. Recycling (and composting) upto 50% of the remaining waste is shown the next most beneficial waste management method. Twede (1995) argued that the reduction of packaging waste can be a source of competitive advantage in which policy makers can take advantage of market forces by incorporating environmental costs of solid waste in the price of disposal through taxation. Other studies including those by Godbey (1996) show that a more basic conclusion is that both use of time and attitudes toward time are critical variables in any attempt to understand changes in the generation of Municipal Solid Waste from household sources. Such changes during the last few decades appear to have increased the amount of municipal solid waste from households independent of other factors. Curlee and Das (1996) address the viability of plastics recycling by tertiary processes. Tertiary processes vary significantly in terms of specific processes, required inputs, and outputs. At one extreme are depolymerization processes, which include hydrolysis, glycolysis, and methanolysis. These processes require clean waste materials and produce relatively high-valued products. At the other extreme are tertiary processes that can use significantly contaminated plastic waste streams as substitutes for crude oil in refinery operations. Other tertiary processes, such as pyrolysis, utilize plastics wastes with contamination levels in between those suited for depolymerization and refinery recycling to produce basic chemicals, such as distillate naphtha, olefins, aromatics, and organic gases. Each of these tertiary processes allows closed-loop recycling in the sense of either reducing the polymer to a monomer from which new polymers can be produced or producing more basic chemicals from which new polymers can be manufactured.

The viability of current and developmental tertiary processes to recycle plastic wastes will be determined by the abilities of those processes to either (1) displace current plastics recycling technologies and approaches, or (2) extend plastics recycling to new segments of the plastics waste stream that are currently being landfilled or incinerated.

Technical and cost improvements in tertiary technologies offer the potential for significant expansion of plastics recycling, in that plastic waste streams currently landfilled or incinerated might be recycled. However, whether this transition is advisable for society must await further research on the financial and environmental character of these technologies.

SUSTAINABLE WASTE MANAGEMENT FOR AFRICAN COUNTRIES

The Sustainable Waste Management for African Countries project's objective is to strengthen the regional capacity for solid waste management in Africa, through developing waste management programmes that include concepts such as waste minimization, recycling and reuse, and informal sector micro-enterprises that link income generation to environmental protection.

In both developed and developing countries, too little attention has been paid to the management of municipal solid wastes. Since 1991, UNCHS (Habitat), UNEP, and UNECA have been developing a common position towards forging a sustainable waste management policy and strategy in Africa. This current proposal is a collaborative effort of these three UN programmes, implemented by UNCHS (Habitat).

Chapter 21 of Agenda 21 on "Solid Waste Management and Sewage Related Issues" offers an integrated strategy for waste management which addresses both formal and informal sectors and includes the following areas: (a) minimization of waste; (b) promotion of waste recycling and reuse; (c) increasing service coverage; and (d) ensuring environmentally sound disposal.

The Habitat Agenda clearly identifies the need for improving the living environment, particularly of the urban poor, to stimulate city development. Environmentally sound waste management will support significantly the implementation of the Habitat Agenda. In addition UNCHS (Habitat)'s recently launched campaign for secure tenure requires the important linkages between tenure and the provision of basic urban services to be further investigated.

The situation with respect to waste management in Africa is particularly severe. The public sector in many countries is unable to deliver services effectively, regulation of the private sector is limited and illegal dumping of domestic and industrial waste is a common practice.

THE PLASTICS MENACE IN KENYA

The collection and disposal of plastic bags is a growing problem in Kenya. The use and free availability of plastic bags has increased significantly in recent years and large amounts of bags have resulted in pollution and degradation of the environment. Thin non-reusable bags are indiscriminately dumped and not collected for recycling or disposal since they have little commercial value. The problem is severe in low-income areas where waste collection services are inadequate. There is need to draw up Plastic Bag Regulations for Prohibition on the supply of carry bags. The aim of the regulations should be to restrict the production of non-reusable plastic shopping bags and to promote re-use and recycling.

Plastic Bag Regulations

Plastic Bag Regulations for Prohibition on the supply of carry bags should make it an offences and one liable to penalties for supply of carry bags of a specific thickness, for instance, a thickness of less than 30 microns OR supply carry bags of a thickness of less than 80 microns

Solid waste examples

According to an article in *Our Planet*, published by UNEP, "An estimated 1,000 ton's of solid waste is generated in Nairobi each day. Due to a vehicle shortage in the Health Department of the City Council of Nairobi (NCC), whose responsibility it is to collect and dispose of waste, only half of this waste is removed. About 500 tonnes pile up each day without hope of removal. There is no proper waste grounds, despite a lobby a couple of years ago to buy land in Langata for the purpose, and collected waste is frequently dumped in lower-income communities. The situation is not much better with liquid waste. The sewerage system is overloaded and poorly maintained, frequently leading to bursts. The surface drainage openings, are clogged with garbage and often overflow."

People living in unplanned settlements such as Kibera in Nairobi, face major health risks due to the conditions surrounding them. The emptying of latrines on a regular basis alleviates the health risk and provides employment for some of the population who earn money from the operation.

Mukuru A

Collects and buys recyclables like paper, plastic, glass, bones and scrap metal and then sells them to recycling companies. The profits are re-invested into the community and are used to pay for such things as food, school, fees and medical care.

Mukuru B

Sends workers to Nairobi's central business district to clean office buildings and recover recyclable. The group also raises awareness about recycling and helps consumers' implement recycling programs. Proceeds have helped members overcome (socio-economic) problem that are all too common in the slums.

Dandora Dumpsite

The Recycling Centre was founded with the help of Father Alex Zanotelli and Father John Nobili in an effort to organize the thousands of scavengers depending on the Dandora dumpsite for their livelihood.

As part of its continuing effort to maximize earning potential and eliminate exploitative middlemen, Mukuru is planning to begin recycling paper and plastics on-site. UNCHS (Habitat) has been involved in Mukuru's development since 1995, by providing machines, organizing workshops and counseling each group.

The Mukuru Recycling Centre includes the following groups:

Mukuru A - collect & sort recyclable material from dumpsites

Mukuru B - collect & sort recyclable material from commercial centres

Makaa Meupe - produce fuel from waste products

COMPOSTING AND URBAN AGRICULTURE - PRODUCE COMPOST FROM ORGANIC WASTE

Composting of solid waste

This is also being done in a local scale in the urban areas in especially the urban periphery in Kiambu and Riruta where workers produce high- quality compost from organic waste. The material, which not is regularly tested, can be used to enrich soil or row seedlings and houseplants.

REVIEW OF THE NATIONAL TRANSPORT POLICY FOR KENYA

Since transport is a multi-faceted function, the policy review process should be addressed through a multi-faceted functional process comprising the following separate elements of transport:

Land passenger transport

Land freight transport

In addition to these separate functions, there is a necessity to formulate policy for Road Traffic management or control, including road safety. Finally, Transport Infrastructure which is common to all the functions and which influences the performance, and is in turn influenced by the requirements of the separate elements, has been identified as a facet for which policy is required. The importance of the intermodal relationship between the separate elements of transport is strongly stressed.

The Overarching Framework for Transport Policy

Transport is seldom an end in itself, but usually it is a means to an end. That end is the smooth and efficient interaction that allows society and the economy to assume their preferred form. Because of this derived nature of transport, policies in the transport sector must be outward looking, shaped by the needs of society in general, of

passenger and goods customers in particular, and of the economy that transport has to satisfy. It follows from this that the priorities in providing and using the transport system should be consistent with those that have been set for the country as a whole.

The current transport system should provide safe, reliable, effective, efficient, and fully integrated transport operations and infrastructure which will best meet the needs of freight and passenger customers at improving levels of service and cost in a fashion which supports government strategies for economic and social development whilst being environmentally and economically sustainable.

This transport system integrates the needs of policy makers and the needs of transport customers, while meeting return on investment criteria. Trade-offs between these needs may have to be made.

Customer imperatives

The goal is to move towards a situation where any customers requiring transport for people or goods should be able to access the transport system in ways which satisfy their choice criteria.

The transport system should be developed to serve the needs of different customer groups: passengers, who could be commuters travelling to work, scholars, long-distance travelers, tourists, or people travelling for personal or private purposes, an persons sending goods, which could be high bulk goods like soda ash and petroleum products, manufactured products, perishables, or those goods which have specialized requirements like hazardous materials.

The goal is to improve the competitiveness Kenya's transport infrastructure and operators to better meet the measured needs of these different customer groups, both locally and globally, by either decreasing transport costs for a given level of service, or increasing service for a given level of cost, or where possible, both increasing service and decreasing cost. For passengers this means the cost of transport should represent a declining, and low, percentage of disposable income; while for goods transport costs should represent a declining percentage of total cost of goods sold (for the same level of service).

Overall, the quality, reliability, safety, security and speed of transporting goods and people will be improved.

It is recognized that not all customers needs can be met at the same level of service. Scarce resources will need to be mobilized to best meet the needs of those passengers and industries who need them most, and which are in the best interests of society. For example, greater emphasis in passenger transport will need to be put on developing integrated mass transit passenger systems and non-motorized -transport, rather than on travel by private cars which are already well served.

Customer needs are not static. They evolve in ways driven, in the case of goods transport, by their end customers, by competition and general economic development. As a builder of infrastructure and a provider of service, the Ministry of Transportation and Communication, should understand that responding to customer needs, or planning ahead of customer needs will ensure that the transport system facilitates economic growth, as well as meeting market requirements.

A goal of the transport system is to create a fully integrated transport and information system, which permits seamless, efficient, and transparent passenger and freight logistics in Kenya, regionally, and globally. The transport system aims to minimize the constraints to the mobility of passengers and goods, maximizing speed and service, while allowing customers the choice of transport mode or combination of transport modes. This demands a flexible transport system and transport planning process, which can respond to customer requirements, while providing on-line information to the user to allow choices to be made. It also requires infrastructure to be tailored to the needs of the transport operators and end customers.

An essential driver of reducing costs of transport is capacity utilization. As such, a goal of infrastructure and modal planning will be to maximize capacity utilization in a development corridor in each mode, and to achieve a level of integration between modes.

Exploitation of the potential of non-motorized transport in both rural and urban areas in Kenya has not been fully recognized.

Non-motorized transport--particularly the bicycle--can benefit the environment by giving high local accessibility to the relatively sparser public transport network for longer distance movement. Much more can be

done at low cost to incorporate non-motorized transport into an overall urban transport strategy, including the provision of bicycle routes and bicycle parking and a proper recognition of slow moving vehicles within traffic management schemes.

Meeting investment criteria

Investment in infrastructure or transport modes should satisfy social, economic, or strategic investment criteria.

Given the long-term nature of investments in transport infrastructure and systems, Kenya must build a strong financial base for the creation, maintenance and upgrading of transport infrastructure. There will be targeted investment to build infrastructure in the right places and of the right kind, which serves the needs of the society.

Long-term investment decisions should be based on sound and explicit criteria aimed at maximizing the use of scarce resources. These resources are not only financial, but also human and material resources. Investment decisions will have to be taken against a set of criteria, which include lifetime cost, economic, social, and other returns to the country of the investment, returns to the transport system itself; and returns to the customer of the investment decision. Environmental sustainability will also be a key measure in investment decisions.

Investments in infrastructure, which will not build economic efficiency or where infrastructure is unsustainable, should be discouraged. Investments in infrastructure which promote energy efficiency, the least consumption of resources, and the greatest benefit/cost return should be favoured.

Information systems need to be developed to provide quality information to aid decisions. For example, the full costs of transport need to be determined and benchmarking data be used to reveal the competitiveness of the transport system.

Integration

The Kenya's transport vision can only be achieved through the sum of the actions of key players. A key ingredient to future success will be a vision for transport shared by all the key role players, backed by co-ordinated and integrated planning and decision making.

A strong, focused, professional Ministry of Transport and Communication requires to play a role in co-ordinating transport policy, and developing and implementing strategies. This, it should in practice, be undertaken in close co-operation with other government departments, other levels of government, and other stakeholders. In particular, there should be closer co-operation between transport and land-use planning.

Inter-modal co-ordination, co-operation and sharing of information should be encouraged in both infrastructure provision and operations to maximize customer service, decrease costs, and maximize social and economic return on investment.

Based on the decision to be made the appropriate government departments, private sector, and consumers should be integrated in the decision-making process through appropriate fora.

The roles and responsibilities of the key stakeholders and service providers should be clearly agreed. This will enable government regulation to be kept to a minimum, while the private sector will be able to build and operate within a competitive environment, be socially and environmentally responsible and self-regulating, and aspire to be world-class transporters and transport service providers.

Institutional Issues

The structural arrangement of transport bodies is an essential element of transport policy and in turn can significantly affect transport policy proposals. As such institutional integration was identified as one of the key thrusts to be addressed in a review of transport policy. Furthermore the proposals for the institutional framework for transport are also related to, and influence, the proposals for the restructuring of government transport assets.

Public policy making is carried out at various levels of government. The hierarchical nature of public policy leads to central government policy generally being broad in nature and providing the reference framework within which more detailed policy is made at district and local authority level. Because of this, transport institutional policy needs to address arrangements for the relationships between various levels of government, as well as the structure for non-government, or statutory transport bodies.

Government Bodies

The task of effecting co-ordination and integration of policy and activities between district and local government is a responsibility, which should be taken up within each specific area-transport policy formulation process.

POLICY OPTIONS AND PROPOSALS

The policy options and proposals should be formulated to include the following areas: Operation and Control, Land passenger transport, Land freight transport, Road traffic.

KEY POLICY AREAS

Land use and spatial development in support of land passenger transport

Land use and transport development are not integrated owing to a fragmentation of responsibilities for the administration, planning and regulation of the various aspects of land use, infrastructure, operations and regulations. This fragmentation has led to low density development, spatially dislocated settlements and urban sprawl, resulting in inordinately long commuting distances and times, low occupancy levels, high transport costs and low cost recovery. Current housing policy, which supports single units on single plots, will not achieve the densities required.

Framework for Provision of Services

There is no statutory requirement to issue permits in terms of passenger transport plans in some cases leading to unbalanced supply, inefficient, uneconomical and unsafe public transport services.

Insufficient and ineffective transport law enforcement leads to non-compliance with the conditions of permits.

KEY RECOMMENDATIONS

The public passenger transport system in Kenya should be based on regulated competition. This implies competition for a route or network, and not competition on a route or network. The regulation should be in the form of a permission, contract or concession awarded in terms of a passenger transport plan and supported by strict law enforcement. There should be a fundamental shift away from monopolistic situations. There should also be a shift away from systems which target commuters only towards one which benefits all passengers.

Funding

Urban and particularly passenger transport have experienced low priority in national funding, apart from the subsidization of rail and bus services.

Specific funding issues which have arisen include the following:

1. the absence of dedicated funding sources for passenger transport;
2. inadequate funds to ensure the implementation of long-term plans;
3. the funding of public transport operations through multiple sources and channels;
4. the imbalance between spending on infrastructure and operations.

Energy efficiency and environment

The use of more energy efficient and less pollutant modes of transport must be promoted.

A greater energy awareness should be fostered in both planners and users of the land passenger through public awareness programmes, differential fuel prices, etc. In this regard, there should be close co-operation between the Ministry of Energy and the Ministry of Transport and Communication.

The use of more energy efficient technologies in transport must be promoted through incentives/disincentives.

Comprehensive integrated planning

It is essential for public passenger transport planning to be carried out in an integrated fashion covering all modes. This planning should be done at as low a level as possible and by the relevant transport authority. Independent planning by modal operators, such as the rail mode, must be discouraged since the passenger transport plan must be holistic and cover all modes.

Road Traffic control

Traffic control (law enforcement) is identified as a traffic management priority, due to a severe breakdown in discipline on the roads, which in turn leads to unsafe conditions, damage to the road infrastructure, etc. The lack of discipline can only be rectified through strong pro- and reactive control actions. The effectiveness of the traffic control function must be improved substantially.

Recommendations for improved transport policy

The need for more traffic personnel and equipment in the country, including the needs of the under-privileged or marginalised communities, should be satisfied.

The level of professionalism of the traffic control profession should be enhanced to improve the image of the profession among members of the public, and to ensure adequate standards and levels of service.

Improvement of road user knowledge, skills and attitudes

A solution of road traffic problems can only be reached if the need to focus on the human aspects of road traffic is fully recognized. The improvement of road user knowledge, skills and attitudes as a road traffic management function is targeted as a priority, due to the inadequate emphasis of this function in the past, and in view of the extreme importance of this function in achieving acceptable levels of road traffic quality.

Transport Infrastructure

Transport infrastructure comprises all physical elements upon which transport operations take place. It covers all modes of transport and represents a significant portion of government's total financial investment in fixed assets. The total replacement value of current transport infrastructure is colossal if one were to go by the figures being used on the El Nino projects in Kenya.

In addition to this the quality and distribution of transport infrastructure plays a significant role in operational costs for the total transport system. Very broadly three quarters of Kenya's internal freight and passenger movements are undertaken on roads with the remainder being mainly undertaken on rail, and only a small part being carried by air and coastal transport.

Foster a sound financial base for transportation infrastructure

It will not be possible to achieve the mission for transport infrastructure without appropriate funding sources. In general, current funding levels are inadequate for: new infrastructure, covering the whole spectrum of infrastructure from a national level to a local level, the maintenance of the existing infrastructure, the upgrading of the existing infrastructure where there are capacity constraints or unacceptable service levels.

Bibliography

- Agenda 21, Chapter 7 “ Sustainable Human settlements”
- Amos, Jim (1993) “Planning and managing urban services”
- Batley, Richard (1996) “Public-private relationship and performance in service provision”- Urban studies vol.33.
- Berghal (1995) “ Habitat and the urban economy” United Nations University, World Institute for Development Economics and Research.
- Buchanan JM (1980) “Rent seeking and profit seeking”: Towards a theory of rent seeking society, Texas A&M university press
- Curlee, Randall, T and Das, Sujit, (1996) Back to Basics? The Viability of Plastics Recycling By Tertiary Processes. Yale Working Papers on Solid Waste Policy, Program on Solid Waste Policy, Yale School of Forestry and Environmental Studies, Reid Lifset, Series Editor.
- Derek Osborn and Tom Bigg “Earth Summit II”, Outcomes and analysis (1978): Financing sustainable development pg 111
- Dodds, Felix “Earth Summit 2002 “ The New Deal: The urban poor.
- Gitau, Sarah and Chris MacOloo (2000) “Human settlements in Nairobi in the last 100 years”, Nairobi
- Global Environment Outlook 2000, UNEP, (Earthscan, London, 1999), pg 1
- Godbey, Geoffrey (1996) No Time to Waste: Time Use and the Generation of Residential Solid Waste. Yale Working Papers on Solid Waste Policy, Program on Solid Waste Policy Yale School of Forestry and Environmental Studies, Reid Lifset, Series Editor.
- Habitat Agenda. Chapter III: Commitments. Section A: Adequate Shelter for All, Para 40 (n)
- Harpham, Trudy and Kwasi Boateng 1997 “Urban governance in relation to the operation of urban services in developing countries”: Habitat International vol.21 No.11
- Ince, Peter,(1995) What Won't Get Harvested, Where and When: The Effects of Paper Recycling on Timber Harvests. Program on Solid Waste Policy, Yale School of Forestry and Environmental Studies, Yale Working Papers on Solid Waste Policy, Reid Lifset, Series Editor.
- International Federation of Red Cross and red Crescent Societies, World Disasters Report 1999, pg. 7. GEO 2000, op cit.
- Kenya National Housing Policy 1997 [Draft]
- Kenya National Housing Policy 2001 [Draft]
- Macharia, K (1992) Slum Clearance and the informal economy in Nairobi: Journal of African modern studies No.30/3
- Moser, Caroline O.N (1987) “Approaches to community participation in urban projects in the third world” (progress in planning vol.32 No.2 pp71-133)
- Moser, Caroline O.N (1996) “Confronting crisis”: A comparative study of household responses to poverty and vulnerability in four poor urban settlements- Environmentally sustainable development studies No.8.
- NACHU (1990): A survey of informal human settlement in Nairobi

Schall, John, (1992): Does the Solid Waste Management Hierarchy Make Sense? A Technical, Economic & Environmental Justification for the Priority of Source Reduction and Recycling, Yale Working Papers on Solid Waste Policy, Program on Solid Waste Policy, Yale School of Forestry and Environmental Studies, Reid Lifset, Series Editor.

Sessional Paper on Housing 1997 (Sessional paper No.5 1965/66)

Stren, Richard (1989) The Administration of urban services (African Cities in crisis)

Stren, Richard (2001) The challenges of Urban government polices and practices: WBI Development studies.

Syagga and J. Malombe (1994)" Development and management of informal housing in Kenya".

Twede, Diana, (199: Less Waste on the Loading Dock: Competitive Strategy & the Reduction of)Logistical Packaging Wastes. Michigan State University. Program on Solid Waste Policy Yale School of Forestry and Environmental Studies Yale Working Papers on Solid Waste Policy, Reid Lifset,, Series Editor.

UN () General Assembly Resolution 43/181

UN Conference in Human settlements (1996) " an urbanizing world"

UN World Urbanization prospects (1999)

UNCHS/GOK (2001) Nairobi Situation Analysis Report. UNCHS and GOK, Nairobi.

UNCHS-Habitat report (2001)

United Nations Development programme (UNDP), Human Development Report. (Oxford University Press, 1999)

World Bank (1995) " Better Urban services": Finding the right incentives.

World Bank (1997) World Development Report 1997.

Yahya S. S. and Nzioki (1994) "Taming the delinquent markets: an analysis of the unregulated housing sub-markets in Kenya".