On road networks, the government has prioritised the need for a designated public road infrastructure network that ensures provision of adequate, safe, reliable, efficient and economical transport services in order to meet the country’s current and future road transport needs and promote economic growth (NRA, 2005).

Figure 3 below shows a well maintained tarmac road with a paved sidewalk to provide space for pedestrians and cyclists.

Conclusion
There is no settlement policy to guide settlement development. As such, settlements have developed in a haphazard and unsafe manner particularly in informal urban settlement. The growth of unplanned settlements is characterized by insanitary conditions, overcrowding, lack of services such as roads leading to traffic congestions.

Recommendation
- Establish rural growth centres to spread urbanization and reduce environmental degradation.
- Create incentives for builders to use environmentally friendly materials and methods.
- Ensure rural and urban planning keeps pace with demographic change.
- Formulate and enforce settlement policies.
- Improve the efficacy and scope of family planning programmes.

Executive Summary
Malawi’s high population growth coupled with rapid urbanisation has led to increased informal settlements and solid waste pollution; environmentally harmful construction methods; and growing numbers of vehicles and pollution from emissions. Therefore, Malawi’s overarching challenge is how to meet the needs of an overgrowing population who depend entirely on natural resources for every provision; water, soil, housing, energy, transport and employment. Measures to reverse environmental damage should therefore focus more on fertility control and nature conservation.

Introduction
The rate of growth and distribution of a country’s population and its density can affect the state of the environment. Malawi’s population has tripled since 1966, reaching 13,077,160 and is likely to increase as a result of intrinsic population growth estimated at 2.9% (GOM, 2009a). Similarly, population density has continued to increase from 59 to 139 persons per square km between 1977 and 2008 (ibid). This increased human population and density has led to increased demand for human settlements and other related services. As people and the environment co-exist, both human habitat and development can affect and become affected by the environment. Therefore, understanding trends in human habitat and socioeconomic development is therefore crucial to maintaining environmental integrity.
The State of Human Settlements in Malawi

Malawi lacks a human settlement framework. This has largely contributed to the expansion of unplanned residential areas in urban centres as is visible in figure 1 below. The fundamental components of human settlements include adequate and affordable shelter, safe and affordable drinking water, and appropriate and affordable management systems for domestic and industrial waste.

The statistics show that over 100,000 people are waiting to be allocated a house through Malawi Housing Corporation, suggesting failure to meet urban housing demand. It is estimated that about 21,000 houses will be needed every year to meet the rising demand for housing in urban areas by 2020. This suggests that Malawi’s cities are ill-equipped to deal with the growing number of people migrating into urban centers. These will have greater environmental impacts on sanitation, hygiene and waste management.

Poor quality housing is visible in rural areas and urban unplanned settlements. The major environmental problem in unplanned urban areas is the existence of slums. Figure 1 below shows poor quality housing in urban unplanned settlement.

Environmental concerns in human settlement?

House construction, especially in rural, unplanned and Traditional Housing Areas (THAs) adversely affect the environment in various ways. For instance, areas used for brick moulding are heavily degraded leaving barrow pits that act as waste dumping sites and breeding ground for mosquitoes and other disease vectors. Burning bricks also contributes to deforestation leading to biodiversity loss, soil erosion and soil fertility (Dagba et al 2005; Zingano, 2005).

Similarly squatter and slum development leads to loss of aesthetic beauty of settlement evidenced from indiscriminate waste disposal, poor drainage, visibility of unmanaged waste water, poor sanitation and erosion in the settlement. The high cost of building materials and lack of capital for house development has contributed to construction of poor quality housing which is a health and social hazard. Figure 2 below shows poor waste disposal in unplanned settlements.

Transport Infrastructure and Human Settlements:

Why the concern?

Human settlements rely on important physical infrastructure such as roads. Road based transport is the most dominant mode of transport in Malawi (GoM, 2005; NRA, 2005; GoM, 2006), and plays a crucial role in the social-economic development by providing vital links between urban centres, peri-urban centres and remote areas in Malawi. Currently, road infrastructure handles more than 70% of the internal freight traffic, 99% of internal passenger traffic and more than 90% international freight and passenger traffic. However, transport corridors have an environmental impact.

Heavy machinery used in road construction, mitre drains and culverts may cause heavy erosion. Similarly the shoulders of the roadside can get washed away in the rainy season if not properly sealed further contributing to soil erosion.

In terms of biodiversity conservation, all transport corridors contribute to the fragmentation of natural areas and fauna habitats. Sometimes if new forest lands are opened, it can accelerate rates of soil erosion, siltation and sedimentation.

Nevertheless, walking is the most travel mode in both rural and urban areas. About 50% of workers in the low income urban areas daily walk distance of 3-5 kilometres. This is a post environmental friendly mode of transport that the government can encourage. However, most roads lack designated foot and cycle path for the majority of people to use.

Challenges Malawi is facing

There is no comprehensive policy providing for guidance to deal with the unplanned settlements and provide tenure security for the urban dwellers. The 1999 Malawi Housing Policy partially addressed the issue of insecure tenure through upgrading of settlements. The Environmental Policy (2004) recognizes the existence of slums but is not backed by land related policies. The Acts recognize the illegality of slums but do not provide solutions for their legalization. Local government and planning authorities have treated the issue of security of tenure on ad-hoc basis by regularizing land through land adjudication and registration.

Similarly, the acquisition process in the formal sector is cumbersome, complex and time consuming and it is not known to majority of the population in urban areas. Moreover, lack of knowledge of the procedure for land acquisition makes provision in the informal sector attractive. In these settlements land is easily accessed at a reasonable cost. Land is allocated by chiefs and the locals who have been incorporated in the cities due to expansion of the boundary, and these continue their traditional role of land allocation. Some of the landlords in the informal sector may not necessarily be chiefs but might be those that have lived in the area for a long time and assumed land lordship.

 Likewise, incomplete conversion of land from customary to public in planning areas has also contributed to squatter development. The government has declared land public, without compensating or resettleing the customary land owners. Lack of capacity to prepare and implement land plans for all rural and urban settlement has contributed to unplanned development.

Actions so far by the government

Malawi government established Malawi Housing Corporation (MHC) and MPICO to construct public housing. These organizations built several houses to meet the demand for the middle and low income households. However, the demand has surpassed supply. At present the estimated demand for housing is 100, 000 and the MHC supplies about 100 houses per year. Therefore, since the urban poor have failed to benefit, their option remains in informal housing settlements.

While government is doing its part, some institutions like Habitat for Humanity, New Building Society and CCODE are assisting in providing for housing services in Malawi.

Other initiatives include the civil servants house ownership scheme and Rural Growth Centres and Secondary Centres Project (Chitukuko cha Mnatauni).