

# PROMOTING SUSTAINABLE CITIES THROUGH SUSTAINABLE TRANSPORT OPTIONS.

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## ABSTRACT IN ENGLISH:

Accra, Ghana's capital; is the fastest growing city in the country (4.2% growth rate). The population stands at 4 million [1]. 70% of the major arterials have speeds, less than 20kph during the AM and PM peaks [2]. Of the 1.3 million registered vehicles in Ghana, 60% are used for commuting in Accra. Past policy has focused mainly on expanding road capacity to resolve traffic congestion. However, congestion cannot be ameliorated solely by increasing road capacities.

Since 2002, the Centre for Cycling Expertise (CCE) has been advocating for more sustainable forms of transport to facilitate the commuting public. In addition to transit, CCE strongly proposes cycling as a policy aim. Although annual traffic data collected on the city's major roads over the years lends the impression that cycling share in the city is insignificant (1%), the Centre conducted mobility surveys, establishing the share at 9%.

CCE's efforts led to the successful inclusion of cycling in the white paper of the National Transport Policy [3]. CCE also organized huge bicycle events and started serious public discussions through both print and electronic media. CCE produced and donated to the city the first Bike Master Plan which included a city wide bicycle network. CCE's activities were funded partly from the Low Cost Mobility (LOCOMOTIVES) programme and the Bicycle Partnership Programme (BPP). These programmes have been spearheaded by the Interface for Cycling Expertise (I-CE), the Netherlands and supported by the Dutch Ministry of Foreign Affairs.

Today, every road project in urban areas is mandated to provide for NMT infrastructure. Such facilities on the High Street (central Accra) are completed; N1 and N4 are currently under construction. These initiatives have the potential to reduce pollution from the transport sector (estimated at 20-55% of GHG).

Key words: sustainable, bicycle, cycling, policy, planning, Accra, Ghana, transport

## **1. INTRODUCTION**

Cities are growing at a very fast rate and according to the 2007 Revision of the World Urbanization Prospects; the rise in urbanization is expected to continue in both the more and less developed regions. The urban areas of the world are expected to absorb any increase in population over the next four decades, while at the same time drawing in some of the rural population [4]. As cities grow and become increasingly dynamic and complex, there is the need to optimize the forces which drive and sustain the city. This calls for economic, social and environmental sustainability in the management of cities, not forgetting that resources are limited and as much as possible waste must be avoided and efficiency exalted as the hallmark of prudent use of resources.

The sustainable city is currently becoming a leading pattern of urban development worldwide [5]. A sustainable city, according to Kenworthy [6], must reduce its use of all resources and decrease its waste outputs. As part of its characteristics, it must increase its liveability in terms of health, employment, income, education, housing, leisure activities, accessibility, urban design quality and sense of community and neighbourhood. The thought of environmental impacts with regards sustainable cities calls for sustainable modes of transport. This form of transport system must provide mobility and accessibility to people in a safe and an environment-friendly mode of transport [7] which includes but not limited to walking, cycling and green vehicles. There has been the need to switch to more sustainable forms of development since the days when the idea of sustainable or eco-city was first coined by Register [8]. In the wake of global warming and concerns about increased pollution and depletion of limited natural resources, it has therefore become imperative to shift towards a sustainable development agenda in our cities.

## **2. BACKGROUND**

Cycling as a means of transport is not new in Ghana. It is still an efficient means of transport in the Northern part of Ghana. Though few people cycle in the south of the country comparatively, it is generally not an acceptable means of transport. Most motorists see cyclists as a nuisance and the danger involved when using the roads is often enough to dissuade many commuters from cycling. Nevertheless, factors such as traffic congestion and the relative high cost of travel is increasingly leading commuters to turn to cycling as an alternative means of transport. Cyclists defy all threats and dangers posed by motor vehicles and insist on their use of the roadway. This poses potential safety issues. A serious look at cycling, for that matter non-motorized transport by the government, is incumbent, looking at the rate at which Accra is growing (most populous in Ghana).

In the promotion of Accra as a sustainable city, the Centre for Cycling Expertise (CCE) has adopted sustainable transport as a means in this direction. CCE mainly promotes walking and cycling in Ghana. This is because without a commitment to improved conditions for pedestrians and cyclists, it is difficult for any city to become more sustainable[6]. There are no associated emissions with these forms of transport which may in any way affect the environment, therefore, the need to promote them.

## **3. THE CENTRE FOR CYCLING EXPERTISE (CCE)**

The Centre for Cycling Expertise (CCE) is a Ghanaian non-governmental organization (NGO) set up with the primary aim of supporting and promoting sustainable Non-Motorized Transport (NMT) in Ghana. A secondary but immediate aim is to develop a bicycle master plan for Ghana, working in collaboration with relevant agencies and organizations within Ghana.

CCE plans to do this in collaboration with a number of stakeholders such as the Ministries of Transportation, Local Government and Rural Development, Motor Traffic and Transport Unit of the Ghana Police Service, bicycle dealers and riders among others.

The mission of CCE is to advocate for a better appreciation of cycling as a form of transport that is healthy and environmentally sustainable.

CCE's vision is to advocate for a people oriented society where cycling and walking are properly integrated into Ghana's transport system and also, where priority is given to people rather than to automobile.

Among its major aims and objectives, the organization, which was established in the year 2002, seeks to:

- Conduct research into bicycle use in rural and urban areas
- Organize training and education programmes for cyclists and pedestrians.
- Advocate for the promotion of bicycle as an effective intermediate means of transport.
- Liaise with other international NGOs to support NMT in Ghana and sub Saharan Africa.

There is a knowledge gap in the NMT and the Centre tries to fill this by creating awareness as well as providing the expert knowledge to conscientize its stakeholders that what the Centre is advocating for can really happen.

At the moment, CCE is the civil society organization (CSO) spearheading NMT in Ghana in terms of cycle planning and provision.

CCE also works closely with companies to deliver their social responsibilities through the design and implementation of viable projects. It establishes good rapport with oversight authorities through whom it channels its concerns and agitations on issues relating to its function as a civil society organization.

Staff of the Centre consist of the Director, Programme Officer, Administrative Officer, Volunteers and Advisory Panel members made up of representatives of civil, public and private consultancy firms such as the Department of Urban Roads, Environmental Protection Agency, Ghana Institution of Engineers, Ministry of Health, etc. The Centre does collaborate with international NGOs such as Interface for Cycling Expertise (I-CE) and Institute for Transport and Development Policies (ITDP).

As part of interactions with multi stakeholders, the Centre collaborates with a number of stakeholders including the following:

- Department of Urban Roads (DUR): The department is into the planning, development and maintenance of road infrastructure in urban areas. The Centre works with them by assisting with its expert knowledge to provide and improve upon those infrastructures with particular regards to NMT.

- Ministry of Tourism and Diasporan Relations: The Ministry is basically involved in the promotion of Tourism nationally and internationally. It is also involved in the minimization factors that inhibit the promotion of Ghana as a Tourist site. In that it tries to modernize slum in urban areas. Since the Centre is also into the transformation of slum areas into attractive sites, we work hand in hand with the Ministry to achieve that result.
- Motto Traffic and Transport Unit (MTTU) of the Ghana Police: This unit works to improve road safety and the Centre advocates the incorporation of bicycle safety in their road safety network. The Centre organized a workshop on Road Safety, from the enforcement perspective for the MTTU police to educate on road safety.
- Environmental Protection Agency (EPA): The Agency deals with environmental sustainability development taking into accounts social and equity issues. They play important role as stakeholders to assist CCE to turn rejected environment into recreational places. Whilst the EPA identifies and quantifies environmental degradation CCE promotes possible environmentally sustainable transport.
- Ghana Highway Authority (GHA): GHA is involved in the planning, development and maintenance of trunk roads as well as engaging consultants to undertake engineering design works. CCE advocates for the incorporation of bicycle routes and walking paths in the road network.
- Ministry of Health (MOH): The Ministry is concerned with the health of the people in the country as a whole. The Centre takes part in the process of educating people on the health issues especially the benefits associated with cycling.

CCE continually advocates for cycling infrastructure inclusion in major projects, organises training for stakeholders such as designers, engineers, policy makers and contractors, to impart knowledge and technical know-how to them.

Some of CCE's activities have been funded partly from the Low Cost Mobility (LOCOMOTIVES) programme (from 2003-2006). CCE also received some funding from the Bicycle Partnership Programme (BPP), (2007-2010). These programmes were spearheaded by the Interface for Cycling Expertise (I-CE), and supported by the Dutch Ministry of Foreign Affairs The LOCOMOTIVES programme helped CSOs to integrate facilities for low-cost mobility into urban transport planning. The BPP, the successor of the LOCOMOTIVES programme, assists local authorities, CSOs and other partners in creating or improving a local process making it possible to use a bicycle as a means of transportation. The BPP aims at promoting cycling, based on cycling inclusive planning, which can make a significant contribution to fighting poverty, improving urban mass mobility at low cost and traffic safety in a sustainable environment and more generally, the quality of life.

CCE also works in close relation with DUR which is an employer of some consultancy firms such as Delin Consult Ltd, from where some additional data are sourced.

The Director of CCE lectures on the NMT module of the Road and Transportation Engineering Programme (RTEP) at the Master's level, at the Kwame Nkrumah University of Science and Technology, Kumasi, Ghana.

### **3.1. CSO Roles and Initiatives**

#### **3.1.1. Community bicycle Caravan and Safe Routes to school**

As part of advocacy and ridership campaigns, CCE in conjunction with ITDP [9] organized the Accra Bicycle Caravan that brought together over one thousand cycling enthusiasts in 2003 [10]. In 2005, CCE jointly sponsored another bicycle caravan in and around Nima, a settlement in Accra. CCE normally organises caravans to create awareness within neighbourhoods, for motorists to be courteous towards cyclists, stimulate people to ride and to educate people on the health benefits associated with cycling. The participants appreciated these factors and it really had impact on them.

CCE also initiates safe routes to school projects to find out the travel mode of students, whether they are safe and if not, a proposal is made to the agencies in charge to create safer routes for students. Safe route to school surveys are appreciated by parents and teachers especially when results of the projects are released to them. This is because most of them do not have the time or simply do not care to find out routes the students use to travel to and from school.

#### **3.1.2. Video Documentary and Radio Talk Show**

CCE, as part of its civil society responsibilities, produced a video documentary on NMT in 2003. This production was carefully put together after extensive data collection and interviews with various stakeholders in the transport industry; that included government agencies and road users. The documentary basically touched on habits and attitudes of cyclists and drivers. It also brought to light the dangers that cyclists are exposed to considering the fact that not enough cycle provisions have been made available and in the face of the apparent disregard for the cyclist by drivers. The documentary was telecast on Ghana National Television in 2004.

In 2004, CCE represented by the Director, took part in a radio discussion programme on one of the radio stations in Accra. The programme which was meant to whip up enthusiasm among cyclists and promote ridership in the Ghanaian society also brought to the fore challenges facing cyclists in Accra as well as the potential benefits to be derived from cycling. An official of the Department of Urban Roads and the Regional Commander of the Motor Traffic and Transport Unit of the Ghana Police Service were also featured on the programme.

#### **3.1.3. Workshops and Conferences**

CCE has taken part in several nationwide and international workshops and conferences with regards to NMT issues. In November 2003, CCE organized a conference in Accra on the theme "Improved Accessibility and Dignified Public Space". The event brought together engineers, planners, architects, as well as development and tourism experts to deliberate on key issues and topics which bothered on modernization, improved city space, the integration of cycling in the design of city transport, housing and tourism.

A workshop on “Road Safety, the Enforcement Perspective” was also organized by the Centre. The main purpose of this workshop was to educate all those involved in ensuring safety on our roads and how to improve on the safety measures right from the construction of the road to the functions of the road user. The Centre presented ten (10) bicycles to the Motor Traffic and Transport Unit of the Ghana Police Service to facilitate their operations.

CCE also participated in a World Bank review meeting to discuss a framework for bus rapid transit (BRT) and cycleways in Accra.

Details of most of these participated workshops and conferences have been outlined in “City Status Report, Greater Accra Metropolitan Area” [11].

### **3.1.4. Newsletters**

CCE Newsletters are published every quarter to create awareness among the upper and middle class in the society, to cycle, not only for transport but for health benefits. Various articles that border on NMT issues are also published.

### **3.1.5. BRT – NMT Project**

DHV and CCE/ITDP agreed in principle for CCE/ITDP to provide information on all aspects involving non-motorized transport for the Transport Planning Study that was undertaken by DHV Consultants of the Netherlands. This is the result of effective advocacy and policy influence on the part of CCE.

### **3.1.6. Urban Transport Planning Study**

CCE was invited in 2005 to participate in the stakeholder meeting on Urban Transport Planning and Traffic Management Studies (UTPTMS) for the Greater Accra Metropolitan Area (GAMA) and other cities. This was a study carried out by DHV Consultants in Association with MDC Ltd.

### **3.1.7. Policy Level**

The Centre influenced the transport policy study to ensure that NMT is captured as a policy aim. The Centre has also influenced the policy makers of Ghana to incorporate NMT in their National Transport Policy.

## **4. METHODOLOGY**

In a bid to promote NMT, as one of the numerous factors to enhancing Accra as a sustainable city and to replicate that in other cities of Ghana, CCE has been spearheading NMT activities in several cities of Ghana. Over the years, large amounts of data have been collected with Delin Consult Ltd, a multidisciplinary engineering firm in Ghana [12].

The data collection processes begin with careful and proper planning from the office (combined team of engineers, planners, researchers etc). Reconnaissance surveys are carried out to study the project areas into details after which census locations are identified for each study. Data sheets are designed for each study, and the necessary logistics made available for the data collection. The essence of the exercises is one essential component which enables the collection of the right type of data. Based on this, enumerators are selected and trained accordingly before being assigned to work in the field. They are trained in the use of the standard data collection sheets, familiarizing themselves with mobility studies etc., after which they are made to practice before the actual collection days.

Depending on the type of study, the sample size, sample population etc are carefully selected. Some of the studies require random sampling; others are also targeted at specific road users like cyclists/ pedestrians etc. Studies conducted include; origin-destination, mobility, accident studies etc.

The studies basically look at assessing the cycling situations and potential for safe cycling in the cities. The studies also provided a qualitative basis for the development of a bicycle master plan for Accra, potentially being used as a model for other Ghanaian cities and in other sub-Saharan African Countries. To further enhance such studies, follow-up studies are carried out to assess mobility patterns and views on cycling and it is no doubt that today cyclists in the cities have increased. The question now is how to properly integrate cyclists into the transport network to allow for choice and safety on our roads.

#### **4.1. Data preparation, Validation and Reliability checks**

Studies of this nature require collected data to be prepared and validated so as to deem them reliable since conclusions and recommendations are based on them, after analyses. Series of operations (including coding) are performed on the primary data so as to prepare them for analysis in further stages. The data are carefully entered into spreadsheets and validated by a quality assurance personnel. The validated data are then analyzed in spreadsheets (Excel, SPSS, Grapher etc), from which meaningful conclusions and recommendations are made.

### **5. RECENT STUDIES IN SOME MAJOR URBAN CITIES**

The population of Greater Accra grew by nearly 100% from 1984 to 2002, from 867,000 to 1.6 million in 2002. It was anticipated that this growth will continue at a similar or higher rate in the future. A mobility survey was undertaken in selected areas of Accra in 2002. Follow-up studies were again conducted in 2004, considering a larger sample size. Nearly 90% of all respondents thought that commuting within Accra was too expensive. A considerable number of those respondents who walked to work said they did so because they could not afford any other means of transportation. As a result of this, travel times are lengthened beyond what would normally be expected.

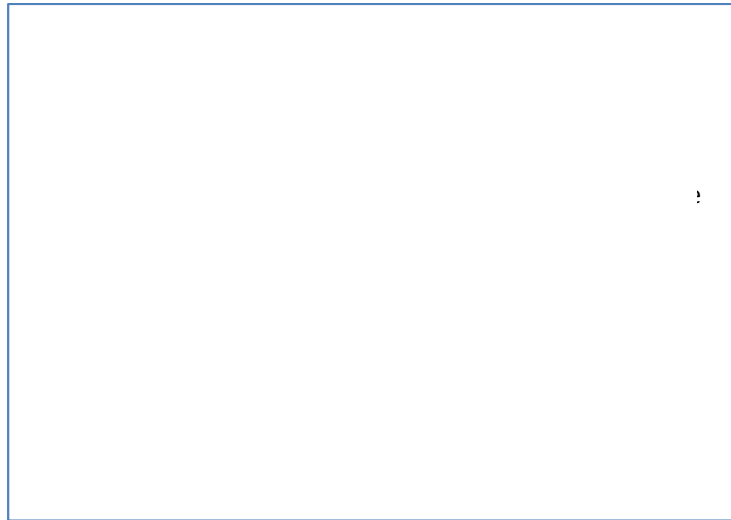


Figure 1- Commuting mode share

Not only did respondents feel that daily travel in Accra is too expensive, but nearly all thought that it took up too much time. Several respondents complained that waiting times of up to one hour for an available “trotro” during peak hours was common. Nine (9) per cent of the trips made in Accra by commuters were by bicycle whilst the highest modal share of transportation was by walking (Figure 1). In all, NMT accounts for nearly 45% of trips in Accra (Figure 1). The purposes of the trips were significantly for work (41%), and for sports (30%). Others included school, shopping and for leisure (Figure 2).

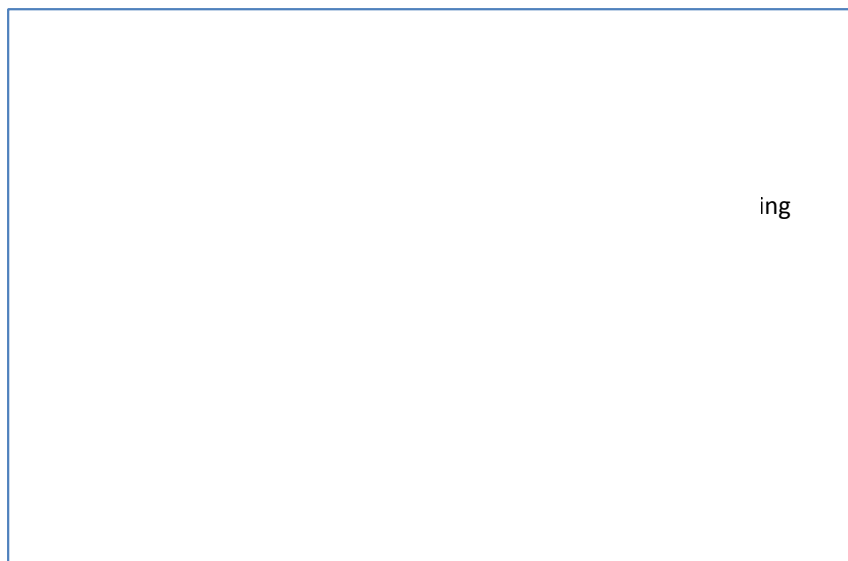


Figure 2- Trip purpose of cyclists

### 5.1. Modal share of cycling in some selected cities

Recent Traffic Management and Safety studies conducted in 2007 [13] showed the following percentages of the populace who cycle in the following cities (Table 1): Wa- 23% of trips, Techiman- 7% of trips, Bolgatanga-30% of trips and Bawku- 49% of trips.



Table 1 - Bicycle trips in some selected cities in Ghana

City	Percentage of bicycle trips
Wa	23
Techiman	7
Bolgatanga	30
Bawku	49

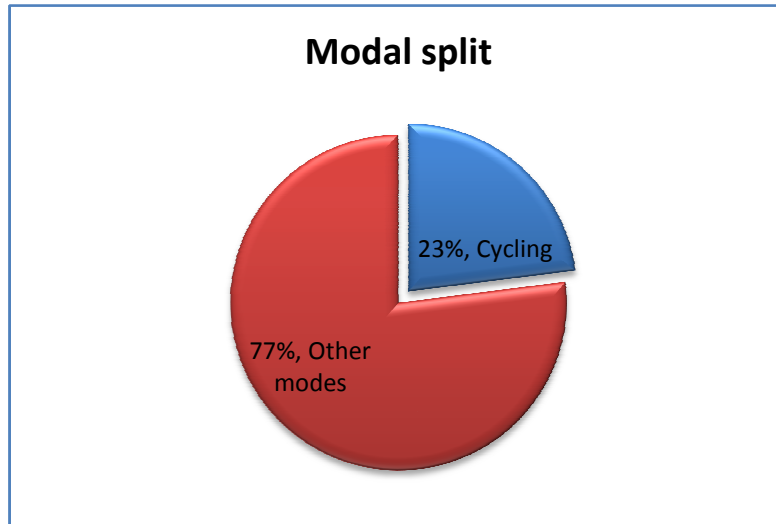


Figure 3 - Modal split (Cycling and other modes, Wa, Ghana)

Wa is in the Upper West Region of Ghana and has a tremendous number of people cycling as a practical mode of transport. The results from the survey conducted in Wa revealed that the highest type of transport mode recorded during a traffic count was by a motor bike which recorded 30%. This was followed by walking (26%). Cyclists who are about one-quarter of the total volume of trips generated do not have bicycle lanes and have to share the road pavement with the cars ( 3%), public transport(15%) and other transport modes (3%), like trucks and trailers.

Techiman is in the Brong Ahafo Region of Ghana which serves as a market hub to many cities. The obvious choice of trip mode here will be by a vehicle. In view of the immense economic activities, Techiman generates both internal and external trips.

As part of the above-mentioned studies, a twenty four (24) hour manual classified count was conducted for a continuous duration of one week in Techiman. The results from the count showed that, the percentage traffic composition in the entire municipality was 5% for cars, 7% for bicycles, 6% for motorbikes, 31% for pedestrians, 10% for buses and vans, 34% for taxis and 7% for other modes. NMT accounted for about 38% of total traffic composition but there is no infrastructure provision for these modes. Figure 5 below shows the cycling modal split, relative to the other modes in Techiman.

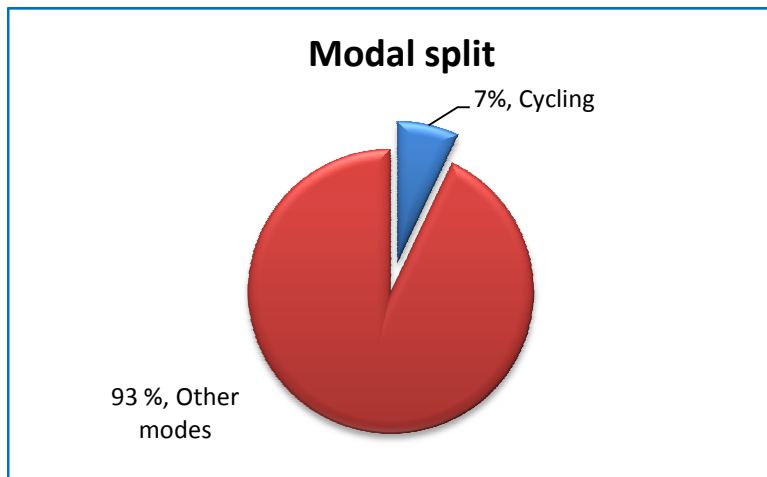


Figure 4- Modal split (Cycling and other modes, Techiman, Ghana)

Bolgatanga and Bawku are in the Upper East Region of Ghana. The percentages of modal share by bicycle indicate that Bawku has the highest percentage of trips made by bicycle, 49 percent, with 30% for Bolgatanga (Figure 6).

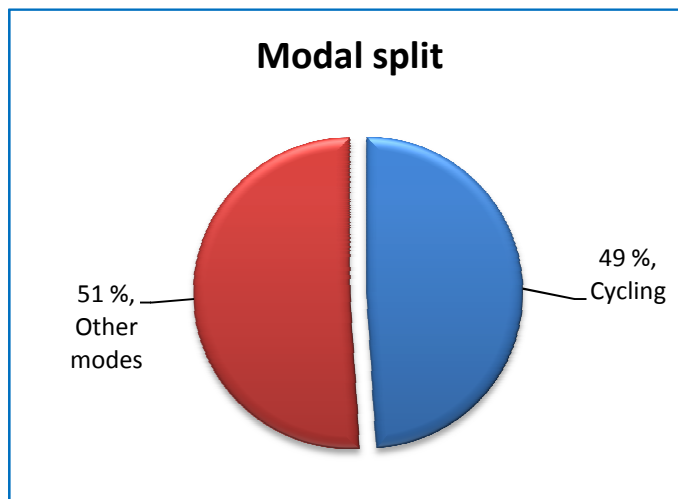


Figure 5 - Modal split (Cycling and other modes, Bawku, Ghana)

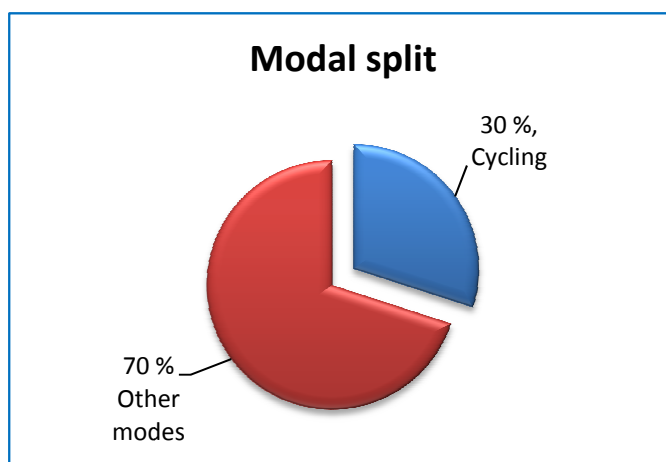


Figure 6- Modal split (Cycling and other modes, Bolgatanga, Ghana)

From all four cities, it was very evident that NMT activities are very high but provisions have not been made for them. They therefore have to share the limited road way with motorists, which also calls for safety with regards to cyclists and pedestrians. Priority is not given to them in anyway, and it is in this regard that CCE has been advocating for more sustainable forms of transport like cycling and walking. These, together with other factors, have the potential of making the cities sustainable.

## 5.2. Trip Purposes for cyclists in Wa ad Techiman

An Origin-Destination Survey from the study also showed that among the cyclists in Wa, 20% of them cycle to work, 9% to school, 2% to market, 1% - tour and 3%-recreation (Figure 7). The touring and recreation are seen as leisure rides. It is observed that an appreciable percentage of the cyclists in the city cycle to work and to school. This is quite different for Techiman where about 49% of the cyclists cycle to work and 18%, to school (Figure 8).

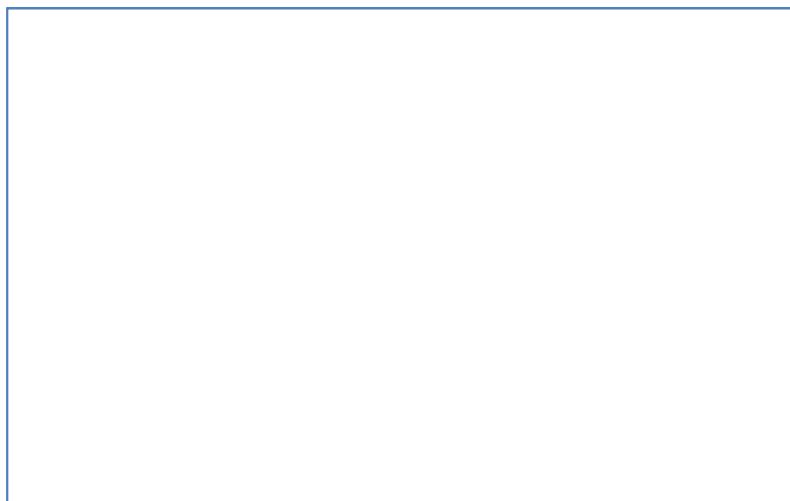


Figure 7- Trip purpose for cyclists in Wa, 2007

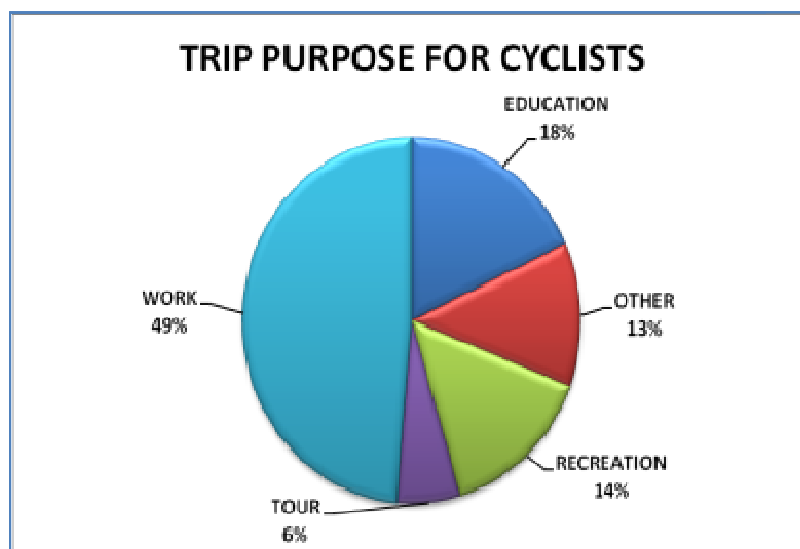


Figure 8 - Trip purpose for cyclists in Techiman, 2007

## 6. BICYCLE IMPORTS

Bicycle makes a valuable contribution in the socio-economic development of a nation- on transport, climate change, land use and public health. Bicycle imports should be closely looked at in view of its reference to the advantages. The influx of bicycles into Ghana is intriguing and interesting. Over a period of 5 years the estimated total amount of custom value of bicycles imported into the country amounted to \$ 55,845,666.51<sup>1</sup>. This reveals that for the period of 5 years the country averagely earns an estimated custom value of \$11,169,133.30 per annum. This estimated amount should not be overlooked as it supports socio-economic development.

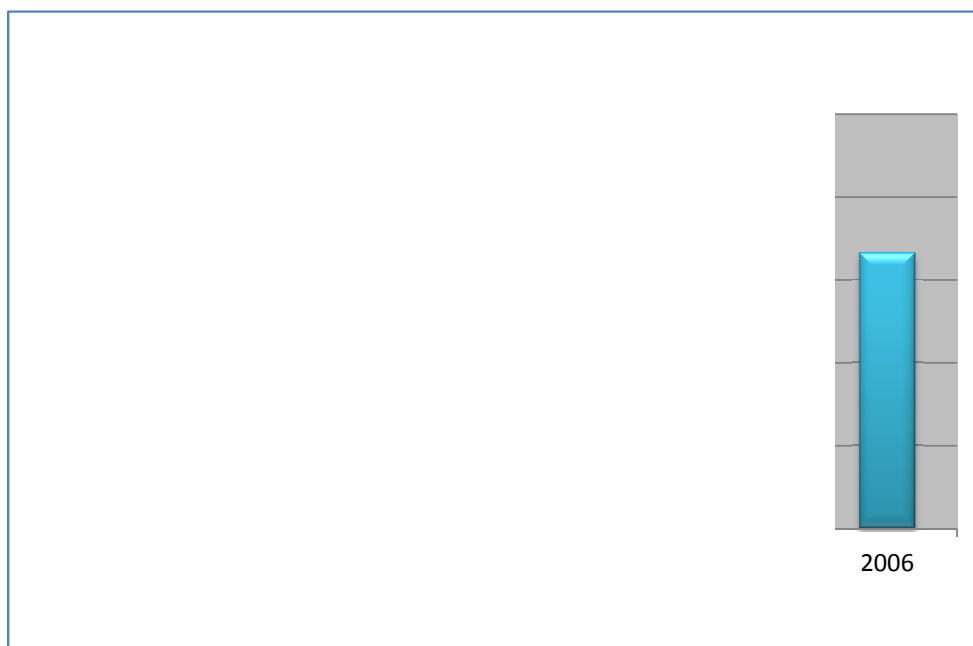


Figure 9- A chart showing bicycle imports into Ghana from the year 2002 to 2006, in Ghana cedis (GH ₵).

Source: Government Statistical Service [14]

From the above chart, the year 2005 recorded the highest custom value of bicycle imports into the country over a 5-year period spanning from 2002 to 2006. Looking at the importation trend, there was huge rise from 2002 to 2003 then it fell slightly by a percentage margin which was less than 1%. Imports from 2004 to 2005 showed a sudden jump. By implication, the bicycle importation trend reveals that bicycle market is increasingly expanding and becoming lucrative in Ghana. *(The average exchange rates used for the respective years were by courtesy of the Bank of Ghana [15] and [16]).*

## 7. GENERAL ATTITUDES TOWARDS CYCLING

Cycling is perceived as unsafe because of the lack of courtesy accorded them by motorists and the glaring absence of facilities (cycle ways) in the city. The results from the studies

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<sup>1</sup>This figure was arrived at based on the average exchange rates for the respective years in question.

show the inherent desire to cycle which has long been suppressed. Education should therefore be enhanced especially during driver training. The curricula for driver training in the country also need to be reviewed. Drivers must be trained to treat other road users with equity and courteousness.

According to Quarshie [17], it has become obvious that most decision makers always prepare and implement plans that favour motorists since these decision makers themselves drive motor vehicles. Instead, there is the need for city planners to understand commuting behaviours so as to plan equitably, since people make cities what they are. It has become the norm that the implementation of road networks within cities leave out non-motorized modes. Our cities are becoming choked with the presence of motor vehicles, day after day, and it is about time Accra and other cities considered other sustainable modes like cycling and walking, into the overall transport policy. These motor vehicles that choke our roads come with their challenges like pollution etc., yet still, decision makers see motor vehicles as the symbol of development. As professionals, we need to understand that people must be the centre of the provision of transport infrastructure, so, the need to provide for soft road users (cyclists and pedestrians) too.

Owing to the lack of technical know-how of integrating NMT into the road network, CCE organized a workshop for city planners and engineers to discuss issues on NMT including planning and design. The centre has also supported some staff in government agencies to attend international conferences to give them a better appreciation of the facts.

The Centre, upon series of data collection and analysis (mobility surveys etc) has in collaboration with the DUR, developed the first ever Bicycle Masterplan (BMP) for Accra. This plan is serving as a strategic policy document and is providing information for a comprehensive network of the national capital territory. A snapshot of the master network is shown in figure 10.

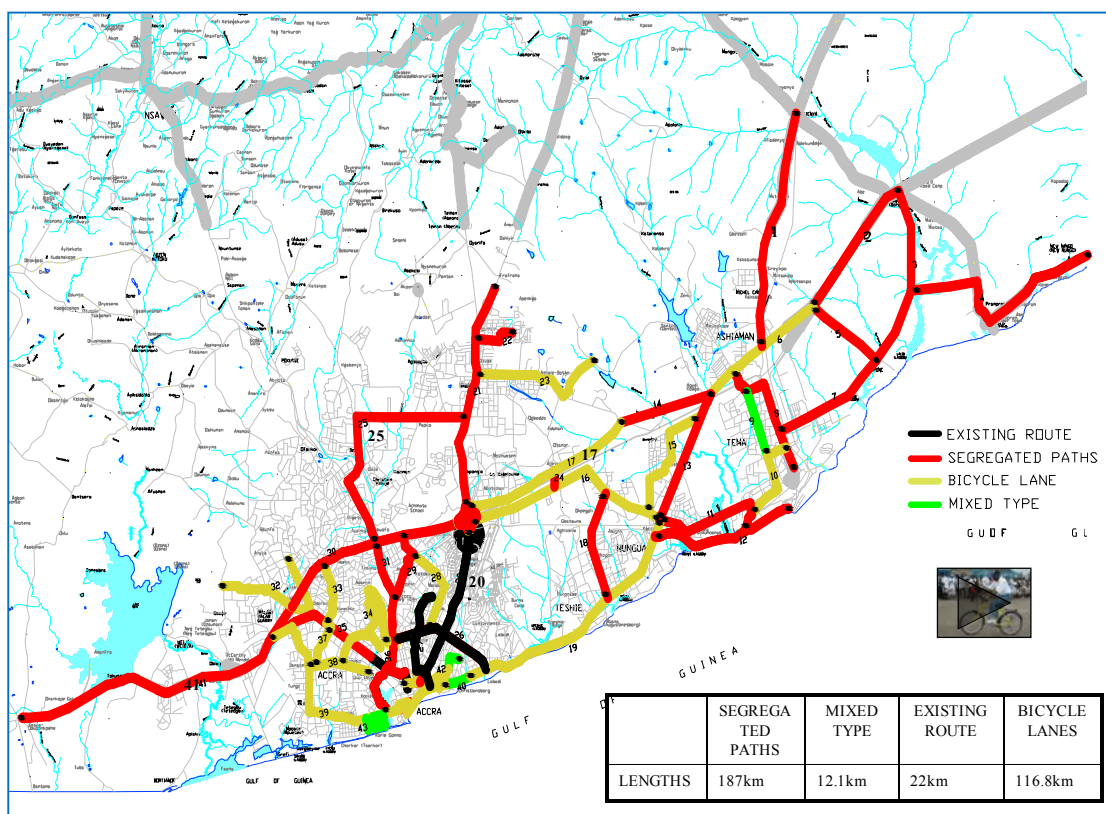


Figure 10 - Accra bicycle master network

The Centre again supports international consultants working for DUR to provide for relevant bicycle infrastructure in preliminary designs in recent contracts and this has yielded very positive results. Also, other conceptual designs have been proposed and given to the appropriate agencies to institute such measures, all in a bid to promote NMT in the city. Some of these are shown below as “before” and after “scenarios”.



Figure 11 – Existing Ashaiman underpass      Figure 12 - Proposed design of the underpass

## 8. CONCLUSIONS

From the survey results, it can be concluded that the majority of respondents feel that commuting in Accra is too expensive, time consuming and produces too much vehicular pollution as a result of congestion. A lot of the cyclists also cycle to work, school etc. But no proper provisions have been made for them in anyway. A potential solution to help alleviate these problems would be to enhance NMT activities and make infrastructural provisions for them. The advantages of this would be to alleviate congestion and its negative effects; and the overused public transport system. Travel times will also be reduced and mobility for the low-income majority will thus be enhanced.

The majority of respondents also felt that cycling within the cities was too dangerous, and so before cycling can be promoted in Accra, the safety issues need to be tackled. The vast majority of the respondents are in favour of improving the lot for cyclists and pedestrians and see cycling as a viable and attractive commuting option, if only it was safe to do so.

The analysis shows how necessary it is to have an effective cycling policy to be an essential part of developing a sustainable transport strategy [18]. Whereas it was not thought as needful to provide the basic infrastructure for NMT, especially cycling in Accra, it has now become necessary to provide NMT infrastructure in every major road project.

With regards to this, the Centre worked with the design team of the Ghana Highway Authority and the consultants to build one of the finest segregated motorways, cycle lanes and pedestrian walkways as shown below (Figure 13). CCE’s efforts of influencing policy makers of Ghana to incorporate NMT in their National Transport Policy are therefore evident in recent road reconstructions such as N4 Highway (Tetteh Quarshie – Madina Section), N1 (Tetteh Quarshie – Mallam junction). The design review and detailed design



of selected roads for urban arterials roads development project also made NMT provisions in their final report. Some of these are shown below.



Figure 13- Segregated road way, cycle lane, pedestrian walkway on the N4

Source: UN-HABITAT [19]

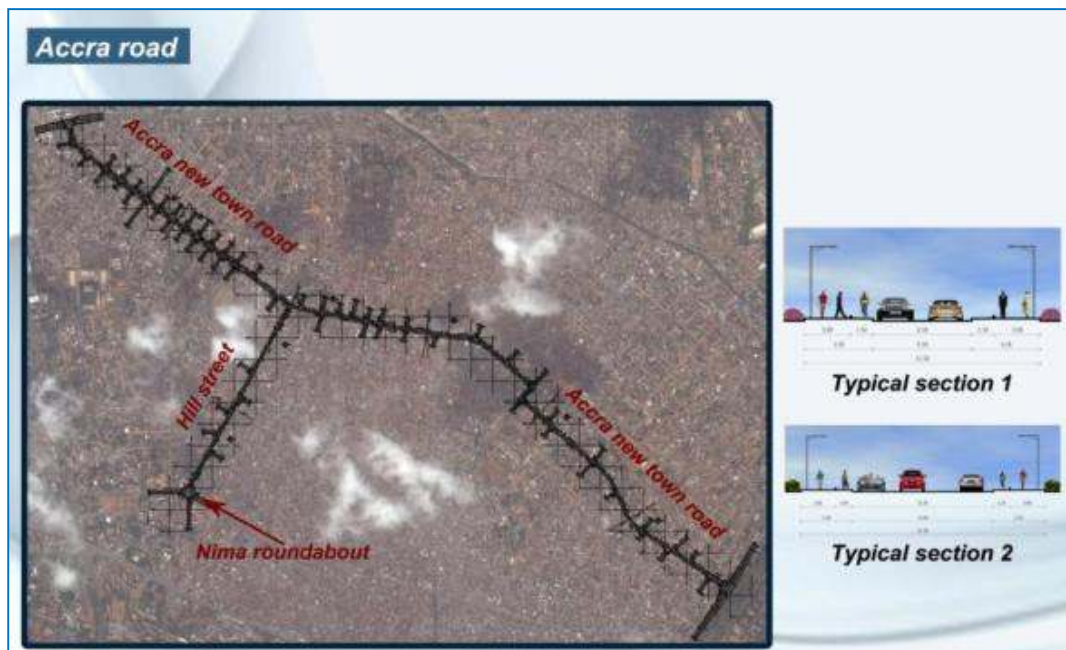


Figure 14 - Typical cross-sections of Accra New Town road and Hill Street, showing NMT provisions

The Centre is again working with city authorities to ensure that bicycle lanes are clearly signed with warning signs to caution motorists from using it. Workers who go on short

journeys can cycle comfortably to work and it is anticipated that a huge mode share switch to cycling by city dwellers is likely to happen when the infrastructure is put in place and made attractive to use. The Centre is also advocating the need for education to sensitize and create awareness among Ghanaians with regards to NMT.

Whilst it is evident that NMT provision is one of several sustainable transport options, they will thrive to stand the test of time, if given the needed attention they deserve. The provision of safe and attractive NMT facilities and its accompanying education will encourage more cyclists and pedestrians to use them, thus promoting a sustainable city at the long run.

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