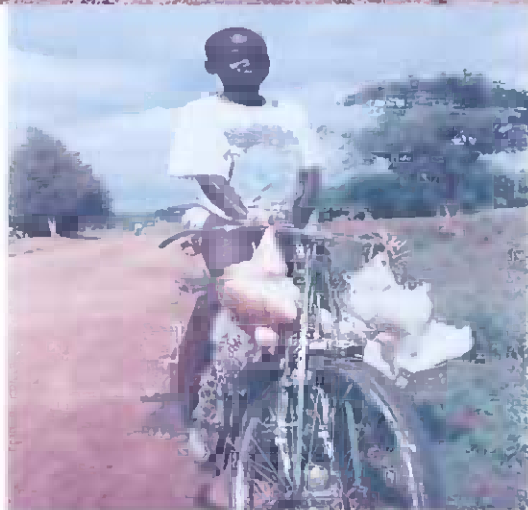


Crop Post Harvest Programme (CPHP)

Rural Transport Services Project for Kenya



Options for provision of rural transport services in Kenya: Boda Boda Case Studies in Busia and Mwea

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Executive summary

Boda boda case studies were conducted in two study areas: Busia and Kirinyaga. The objective was to examine boda boda as an option for rural transport services provision focussing on incomes, age of entry to boda boda business, ownership of the bicycles, level of education, main activities and problems encountered, as well as bring out specifics on modal composition of local traffic flow, distances and payload capacities of different types of IMTs and other modes of transport. This is part of an on-going research to gain an in-depth understanding and knowledge of the issues and problems of rural transport services (RTS) in Kenya.

Bicycles are a major means of transport in Kenya, and boda boda gained prominence in the last 2-5 years due to inadequate transport services and deteriorating infrastructure, which have frustrated especially farmers' ability and efforts to transport and market their farm produce. This is particularly so in rural and peri-urban settings and has been with serious consequences.

In Mwea, bicycles are sourced from Embu or Nairobi at a cost of Kshs 2,600 but are modified at a cost of about Kshs 2,500 before being used for boda boda. This involves reinforcing or replacing weak parts or links. In Busia, people acquire bicycles from Uganda side at an average cost of about Kshs 3,200, and these are always ready for use. Data on ownership of bicycles in the project areas indicates that in Busia each household owns about two bicycles where as in Mwea two households share a bicycle. However, the proportion of the total number of bicycles that are used for boda boda in Busia is only 8 percent compared to 14 percent in Mwea. Many boda boda operators use their own bicycles, which they acquired and modified for this work. Up to 68 percent of boda boda in Busia are personal bicycles compared to Mwea with over 77 percent. There is also a number of people particularly women and older people in other occupation who hire out their bicycles for use. The hired bicycles constitute 30 percent of boda boda in Busia and 11.4 percent in Mwea.

The majority of boda boda operators in both Mwea and Busia are primary school dropouts. With boda boda associations formed to instil operational discipline, entry into boda boda is being regulated to allow only adults at the age of 18 and above. Boda boda trade is older and well organised in Busia than Mwea and as such a number of old people in their 40s are operating in this business. Operators in Busia generally work for longer hours than their counterparts in Mwea, working for up to 14 hours a day. In Busia boda boda operators wear uniforms for identification while on the other hand, boda boda identification is confined to bicycles which have number plates.

The bicycles are designed to carry only one passenger at a time but some carry two passengers especially when the other passenger is a younger person, with him or her sitting on the crossbar. Goods weighing 200 kg have been seen on boda boda, in which case the operators can only push the bicycles. Generally, women are the main customers of the boda boda industry, yet very few women are actually operating boda boda as drivers.

Transport charges are regulated by associations, and are based on distance and whether it is a person or goods. Goods will normally fetch a higher charge. In Mwea, it costs approximately Kshs 7 to move a person a distance of 1km and Kshs 5 in Busia. There are seasonal variations in charges with fares going up during rainy seasons. Boda boda provides an average income of Kshs 300 and Kshs 150 per day in Mwea and Busia respectively. Mwea has fewer number of boda boda operators and hence the competition is low, bringing higher returns compared to

Busia. Incidentally, many boda boda operators do not consider themselves as employed despite the fact that they earn more than most lower-cadre civil servants and farm workers.

The maximum distances covered per day range from 70 km in Busia to 30 km in Mwea. The distance of 70 km is actually composed of many short trips along the Busia highway which is relatively flat and the road is in very good condition. Off-road tracks are normally undulating and rough and hence distance covered within such tracks is limited.

Early marriages in Busia are rampant compared to Mwea, and so is HIV/AIDS, and these problems have been attributed to cross-border trade and boda boda business. Paradoxically, women who are married to boda boda operators complained about their husbands' loss of libido, who on the other hand attributed their lack of sexual condition to long hours of hard work, which made them to be too tired to be interested in sex. Other ailments include frequent bouts of pneumonia and chest pains.

The government waived import duties on bicycles in 2001 which was aimed at making them affordable to a majority of rural and urban population who relies largely on non-motorised means of transport. However, duty on spare parts remains high with the result that bicycle maintenance and repairs are costly. In Busia, the operators and repairers are able to smuggle spares from Uganda where the duty is low.

The problems encountered by boda boda operators are numerous other than on health and accidents. These include assault / mugging/ robbery especially at night by criminals who pose as customers and rob them of their day's collection, non payment by hooligans after they have reached their destination and harassment or arrest by police, when they end up carrying criminals on the run without their knowledge.

Boda boda operators have therefore come together in both areas to form association / welfare groups to instil operational discipline in their work as well as collectively deal with problems in boda boda business. The associations also act as control, regulating which routes and how passengers are treated, aside from providing assistance in cases of accidents, death, etc. The associations have also initiated other income generating activities such as brick-making and livestock keeping.

There are a number of challenges that need to be tackled for successful integration of boda boda countrywide. Nonetheless, be it social, business or other functions, moving people at low cost together with offering an alternative source of rural livelihoods, is the drive behind boda boda business. Many rural areas in Kenya remain remote and cut off from the mainstream activities. Other areas exhibit gaps between transport needs and requirements of communities and the ability of the existing transport systems to meet these wants. In an attempt to bridge this gap and open remote areas, it is imperative that we transfer a means that would not only be dependable, affordable and available, but that which will also seek to sustainably improve livelihoods of those communities, in consultations with them. The present transport crisis has therefore drawn the country's attention to alternative systems, and boda boda may at present and in future amount to a reliable and cost-effective means of transport for many rural and peri-urban and even urban communities.

1. Introduction

Transport is considered as one of the basic requirements to steer economic growth of any country. The cash economy of most rural and peri-urban areas in Kenya is largely dependent on agricultural produce and livestock products. Most of these goods need to be moved to market places or collection centers from where they are sold; and their returns to farmers decrease to a greater extent with the distance which buyers have to cover to access them. Transport in rural and peri-urban areas relies heavily on non-motorised means, from walking, bicycles to animal-drawn carts. The importance and role of bicycles in rural transport services is yet to be quantified.

In Kenya's rural and peri-urban towns where provision of essential services such as health, education, water, fuel and markets are inadequate, the use of bicycles to move people and goods is growing at a fast rate. Presently, a number of bicycles are being used for passenger hire service. Popularly referred to as 'boda boda', which is a corruption of the English 'border-border', it provides a relatively low-cost low capacity means of transport. In areas where they have been introduced, boda boda is one of the most significant means of transporting people and goods as well as a source of employment and income for bicycle operators and owners. Notable is the fact that boda boda is used loosely to refer to both the bicycle and the business (transporting of goods and people) itself.

This report outlines recent studies conducted on boda boda in both Busia and Kirinyaga districts of Kenya. It draws its findings from interviews conducted using questionnaires and discussions with focus groups and various stakeholders in the research areas including operators, owners, bicycle repairers and policy makers.

1.1 Study objectives

The objective of boda boda study was two-fold:

- To bring out specifics on modal composition of local traffic flow, distances and payload capacities of different types of IMTs and other modes of transport common in the study areas;
- To examine boda boda as an option for rural transport services provision focussing on incomes, age of entry to boda boda business, ownership of the bicycles, level of education, main activities and problems encountered.

2. Methodology

To assess modal composition and study boda boda situation, a number of questionnaires were designed (see appendices). The questionnaires focussed on:

- modal composition,
- households, as users of transport services, and
- personal boda boda operators.

For the modal composition, three days were selected for data collection to represent different levels of transport demand throughout the week in each study area – for example, a market day, a normal day and Sundays. Data collection started at 6 a.m to 6 p.m and each day's data was summarised in three categories: traffic density summary; non-motorised summary; and bicycle (boda boda and personal bicycles) summary.

Enumerators were asked to record separately peculiar transport means, modifications, incidences or comments pertaining to the means of transport. In the household questionnaire, 20 randomly selected households were interviewed in each area and any special issues raised by the respondents recorded. The bodaboda questionnaire was administered directly to bodaboda operators in each area. The table below gives a summary of how the questionnaires were administered.

Table 1: Summary of questionnaires administered

Type of questionnaire	District/ Site	
	Busia	Mwea
Mode of transport	72	72
Household survey	60	60
Boda boda operators	100	100

Further information was gathered through focus group discussions with various stakeholders: operators, artisans or bicycle repairers, farmers as well as credit providers.

3. Results and discussions

3.1 Overview of rural transport scenario

3.1.1 Livelihoods and transport in the project areas

Mwea: This area lies within Kirinyaga district and popular for rice growing. The average farm size is 1.25 ha but residents have access to irrigation schemes where they can hire land to grow rice. Horticultural crops especially French beans and tomatoes are increasingly being grown for export market.

The main road connecting Mwea with other major towns is tarmacked and in good condition. However many farms can only be accessed through either feeder or earth roads which are poorly maintained and in bad conditions. Transport of farm produce to and from these farms is mainly by donkey carts. On the other hand, boda boda is commonly used by people going to rural areas and work.

Busia: Busia lies at the border between Kenya and Uganda, and there is a lot of cross-border trade in the area. Agriculture is the main economic activity in the area with sugarcane as the main cash crop. Small-scale agriculture employs the majority of the population. The small farms range from 2ha to 10ha. Maize has the largest acreage under crops. Sorghum, finger millet, beans, cotton and different vegetables and fruits are also grown.

The main road to Busia town is in good condition and has a lane for boda boda operators. The feeder roads are not tarmacked (murrum or earth) and have potholes. Transport for both people and goods is provided by public vehicles as well as boda boda which are many. Off the main road is dominated by boda boda which are very popular and have almost taken over transport services connecting to feeder and main roads.

3.1.2 Mode of transport

In Busia, the mode of transport commonly used include:-

- walking
- bicycles (personal and boda boda)
- motorized – from mopeds to long distance trucks
- hand carts and wheelbarrows

The density of the means varies from urban, peri-urban and rural sites. The bicycle is the most common means of transport followed by walking. Generally, Busia is basically a ‘cycling area’ in which transport within and outside the township is dominated by bicycles, and these provide an important linkage with the rural areas. Specifically, boda boda services in Kenya started in Busia, a town that lies at the border with Uganda.

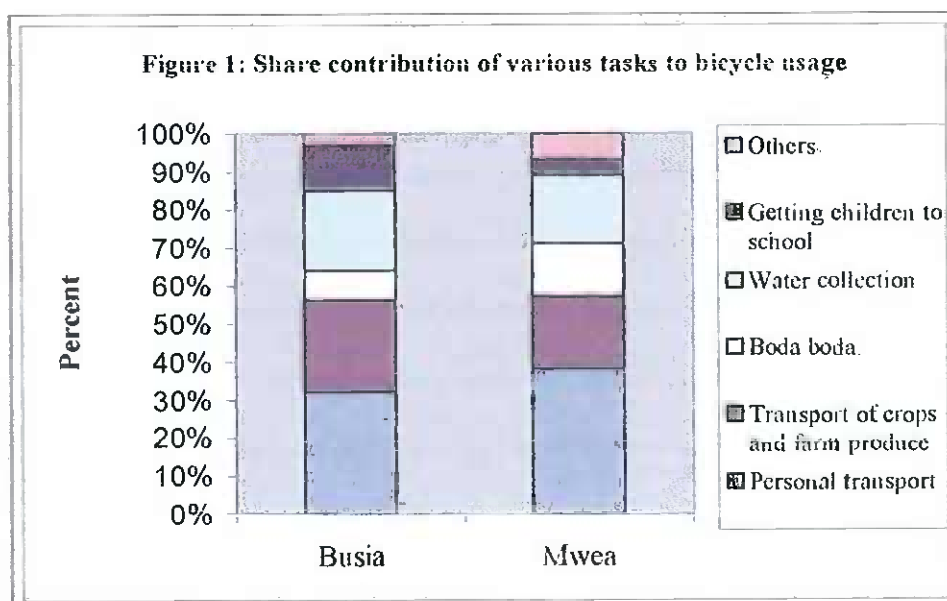
Boda boda is now rapidly spreading in Mwea where it provides transport links to long distance places of up to 15km in rural areas and is also used to move goods. However, donkey carts are the commonest form of transporting goods particularly water and rice. Cruelty to donkeys is rampant. More modes of transport are available in Mwea and include:

- motorized (pick ups, lorries and tractors),
- non-motorised (donkey, hand and oxen carts, wheelbarrows and pack animals).

Data on ownership of bicycles in the project areas indicates that in Busia each household owns about two bicycles where as in Mwea two households share a bicycle. As a result the bicycles in Busia are far much more than those in Mwea. However, the proportion of bicycles that are used for boda boda in Busia is only 8 percent compared to 14 percent in Mwea. Most people use bicycles for their own transport needs (see Table 2 and Chart 1).

Table 2: Proportion of different uses of bicycles in Busia and Mwea

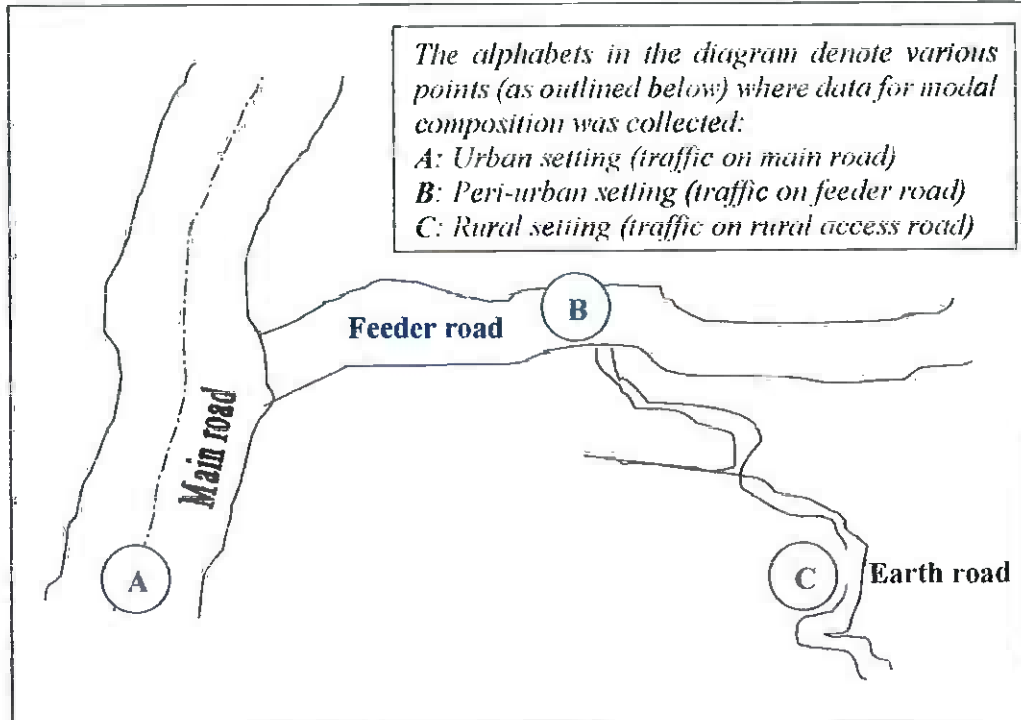
Use	Busia	Mwea
Personal transport	32	38
Transport of crops and farm produce	24	19
<i>Boda boda</i>	8	14
Water collection	21	18
Getting children to school	12	4
Others	3	7



3.1.3 Traffic density in the project areas

In order to get a picture of the traffic density for each area, traffic count was conducted in three different settings: urban, peri-urban and rural setting as shown in the map below (Diagram 1) on three different days (normal, market and Sunday). The results are tabulated (Table 3).

Diagram 1: Descriptive map showing data collection sites for traffic count



Note: The map is not drawn to scale

Table 3: Typical numbers of various means of transport counted on different days at specific sites in Mwea and Busia

		Rural setting – Site C			Peri-urban setting – Site B			Urban setting – Site A		
		Normal	Market	Sunday	Normal	Market	Sunday	Normal	Market	Sunday
Busia	Personal bicycles	624	683	410	1219	893	610	2933	2806	2565
	Boda boda	157	144	99	323	238	174	989	1061	842
	Handcarts/ wheelbarrow	1	0	0	3	5	2	1	1	0
	Donkey/ ox-carts	0	0	0	14	17	4	0	0	0
	Pickups/ psv	6	1	1	2	1	3	518	563	432
	Lorries	8	3	0	7	5	4	172	118	83
Mwea	Personal bicycles	455	648	582	1406	2007	1568	1914	2638	2826
	Boda boda	108	56	88	538	727	345	534	1816	984
	Handcarts/ wheelbarrow	0	0	6	0	0	0	2	0	0
	Donkey /ox carts	15	43	4	5	2	11	96	199	12
	Pickups/ psv	17	36	16	0	1	0	1077	849	834
	Lorries	7	7	7	44	25	9	314	390	208

3.2 *Boda boda operations and utilisation*

3.2.1 **Ownership and acquisition**

Boda boda are basically bicycles which have been reinforced or modified for strength and durability. The bicycles in Mwea are bought at a cost of about Kshs 2,600 from Embu or Nairobi but undergo further modifications before being used for boda boda. In Busia most bicycles are bought from Uganda at a cost of between Kshs 3,000 and 3,500 and are of high quality designs.

Many boda boda operators use their own bicycles, which they acquired and modified for this work. Up to 68 percent of boda boda in Busia are personal bicycles compared to Mwea with over 77 percent (see Table 4). There is a number of women particularly widows and older people in other businesses who hire out their bicycles for use. The hired bicycles constitute 30 percent of boda boda in Busia and 17.4 percent in Mwea. The research revealed that in Busia, there are many widows whose husbands died from HIV/AIDS and were left with bicycles, and these have become their only source of livelihoods.

Rice and horticultural farming as well as water transport in Mwea are the main source of capital for a high proportion of the youth who are now in boda boda business. Many boda boda operators in Mwea started out as donkey cart drivers and were able to save over time to be able to purchase their bicycles. Others also worked in rice fields and French beans farms for daily rates of Kshs 80.

Ownership in terms of gender was difficult to quantify since households are culturally male-headed and as such properties belong to men, other than female-headed households. The study found that women users in Busia and Mwea represent 15 percent and 12 percent respectively. The youth in Busia (between 18 and 25 years of age) owned a sixth (1/6) of the total boda boda bicycles against two-seventh (2/7) in Mwea. Presently, there are operators with more than one boda boda who hire theirs to others. The operators in the two areas have formed welfare associations from which they can get small loans to assist members acquire bicycles, among other issues.

Table 4: Boda boda ownership in Busia and Mwea

	Busia (Percent)	Mwea (Percent)
Personal bicycles	68.0	77.2
Hired out from other people	30.0	17.6
Father giving out to his child	1.0	3.5
Mother giving out to her child	1.0	1.7

3.2.2 **Level of education and age of entry**

In both Mwea and Busia, the majority of boda boda operators are primary school dropouts (Table 5). A number of secondary school leavers and few college graduates are also in the business with Busia having the largest number of secondary and post-secondary graduates in boda boda business. Operators with secondary and post secondary education are mostly found operating in towns. Operators manning stands in rural areas are almost exclusively primary school dropouts.

Table 5: Level of education of boda boda operators

	Busia (Percent)	Mwea (Percent)
None	8.0	9.6
Primary school dropouts	80.0	77.3
Secondary school leavers	7.4	9.2
Post secondary graduates	3.6	3.9

With boda boda associations formed to instil operational discipline, entry into boda boda is being regulated to allow only adults at the age of 18 and above. Boda boda trade is older and well organised in Busia than Mwea and as such a number of old people in their 40s are operating in this business.

3.2.3 Time and days of work

Majority of boda boda operators in Busia start working at around 6.00 am to take school children to school. In Mwea, the boda boda operators carry mostly people in formal employment and business persons who do not start their activities until day-break. Market days in both areas are the busiest with most of them starting as early as four in the morning to carry goods to market centres. Unfortunately, in terms of returns market days are the worst since even inactive operators work on this day and thus the competition is higher.

Operators in Busia work for longer hours than their counterparts in Mwea. Many operators in Busia work for up to 14 hours a day. In Mwea, work starts from about 7.00 am to 8.00 pm. Mornings are generally busy during weekdays where as Fridays have busiest evenings, with some operators going way past midnight to offer services to mostly male passengers most of whom are drunk at this time of the night. In both areas Sundays are very relaxed with only a little work in the morning ferrying people to church and other social functions such as funerals and visiting relatives. This is also the day that most operators take their day off to repair and service their bicycles.

3.2.4 Modification and identification

Before a new bicycle is used for boda boda in Mwea, the operators normally have to replace rims, chains and tyres with heavy-duty ones, reinforce cross bars and carrier holders as well as adding cushions, head lights and side mirrors. Indeed, bicycles being used for boda boda in most areas have additional crossbar and carrier holder (Photo 1). These modifications and additions cost about Kshs 2,500.

Aesthetics is also an important consideration. Many bicycles are painted in bright colours and have with beautifully designed mudguards, posters or writings attached (Photo 1). A few have got radios fixed, all these to attract customers.

In Busia, operators said that most of their bicycles are bought from Uganda. These require only small adjustments such as fitting side mirrors and padding or cushions on carriers for passengers, which cost less than Kshs 500. Cushions are



Photo 1: Mwea boda boda bicycle.

removable and conveniently so for carrying goods. Like Mwea, most operators are now fitting radios to entertain their passengers.

In Busia boda boda operators wear uniforms for identification and some of the uniforms are numbered. On the other hand, identification in Mwea is done through number plating of boda boda bicycles, which uniquely identifies each with the owner.



Photo 2: Boda boda operator in Busia

3.2.5 Goods and services

Be it social, business or other functions, moving people at low cost, is the drive behind boda boda business. People go to places of work, health and market centres, funerals, schools, weddings and churches which more often require travelling a distance of over a kilometre. In some of these cases, there are goods to be delivered to a particular place. Boda boda offers all these services. They are popular with most people since they provide a door-door service.

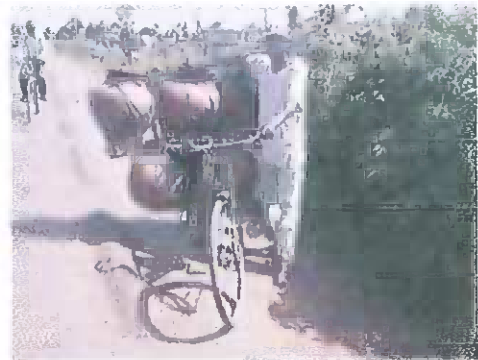


Photo 3: Transporting pots to market centre

The bicycles are designed to carry only one passenger at a time, and indeed this is normally stipulated within articles of the various boda boda associations. However, it has been observed that some carry two passengers especially when the other passenger is a younger person, with him or her on the crossbar. The boda boda operators can carry goods to a weight of 200 kg (4 bags of 50 kg cement), but some have been seen carrying much more which they can only push. Scenes of bicycles in a walking mode are common (Photo 3). It has been observed that where smaller children are to be carried, a seat frame is attached to the base of the carrier to protect them from falling off (Photo 4).



Photo 4: A seat frame attached to carrier

In Busia, goods carried include livestock products (milk, eggs, hides, skins, meat), livestock (pigs, poultry, goats and sheep) and crops (maize, rice, potatoes, cassava, sugar cane, etc). In Mwea, the goods range from farm produce (rice, beans, potatoes, cabbages, etc) to general merchandise (clothes, shoes, etc).

Boda boda operating in townships mainly do so from stands either at bus stops, or points by the road-sides. In rural areas they are found at road junctions or near shopping or market centres. Generally, women and visitors from other areas are the main customers of the boda boda industry in Busia since most men have their own bicycles. The case is similar to Mwea. At the same time, very few women operate boda boda. Overall, women cyclists are fewer in Mwea compared to Busia.

3.2.6 Distances and infrastructure

Boda boda provides short distance and low capacity services within small urban and peri-urban towns, feeding to major public routes. It also operates in remote rural areas where they provide access to shopping and market centres. They operators run a passenger paid for service and also move goods. The maximum distances covered per day range from 70 km in Busia to 30 km in Mwea. The distance of 70 km is actually composed of many short trips along the Busia highway which is relatively flat and the road is in very good condition. Off-road tracks are normally undulating and rough and hence distance covered within such tracks is limited.

3.2.7 Income and charges

In both areas, charges at any one time are regulated by boda boda associations. The charges are based on distance and whether it is a person or goods to be moved. Goods will normally fetch a higher charge. In Mwea, it costs approximately Kshs 7 to move a person a distance of 1 km and Kshs 5 in Busia. There are seasonal variations in fares with fares going up during rainy seasons.

Bicycle is a source of livelihoods for many people in the project areas, providing an average income of Kshs 300 and Kshs 150 per day in Mwea and Busia respectively. Mwea has fewer number of boda boda operators and hence the business is high compared to Busia. Incidentally, many boda boda operators do not consider themselves as employed despite the fact that they earn more than most lower-cadre civil servants and farm workers.

3.2.8 Breakdowns and repairs

Boda boda operators argue that many of the breakdowns they experience are due to the bad conditions of the roads especially the feeder and earth roads. Frequent repairs include punctures, replacing worn out tyres and tubes, bent rims and spokes. The cost of repairs and maintenance in Mwea is about Kshs 300 per month more than that in Busia and this may be attributed to low-cost and easy access to spares. In Busia, bicycle spares are easily available and sold locally on the streets (see photo 5).



Photo 5: Bicycle spares sold on the streets in Busia

3.2.9 Lifestyles and health

Early marriages in Busia are rampant compared to Mwea, and according to residents the cross-border trade and boda boda business bring about a lot of money in circulation that make it easy for young ladies to be wooed into illicit relationship. The operators who are at their prime age are known to be sexually active. At the same time, HIV/AIDS is spreading at an alarming rate in the area, and the rapid spread of the disease has been blamed on boda boda operators. Discussions with boda boda operators in Busia revealed a lot of ignorance regarding safe sex.

Paradoxically, women who are married to boda boda operators complained about their husbands' inability to satisfy them sexually. The operators on the other hand attributed their

loss of libido to long hours of hard work, which made them to be too tired to be interested in sex. Some operators complained of frequent bouts of pneumonia and chest pains.

3.2.10 Environment

Many boda boda operators can be seen washing their bicycles at a famous water point along the main Busia border road. In Mwea, the operators wash their bicycles in the streams from where people draw water (Photo 6). As a result, pollution on water points with the resulting infections and spread of water borne diseases have been partly blamed on boda boda operators.



Photo 6: Washing bicycle at a water point in Mwea

3.2.11 Policy, organisation and regulation

The government waived import duties on bicycles in 2001, which was aimed at making them affordable to a majority of rural and urban population who relies largely on non-motorised means of transport. This was a positive step towards improving general mobility by resource poor people. However, duty on spare parts ranges from 15 to 35 percent in addition to 18 percent VAT (value added tax) with the results that bicycle maintenance and repairs are costly. In Busia, the operators and repairers are able to smuggle spares from Uganda where the duty is low. In that connection, maintenance and repairs in Mwea is higher by over 40 percent.

The traffic rules for motorists, cyclists and pedestrians are hardly adhered to and coupled with sorry state of the Kenyan roads there are more often accidents due to the interactions between the various means of transport. In cases where boda boda operators are involved, they have borne heavier losses. Where a passenger is involved, they have had to organise for treatments or compensation since there is no insurance for them. Discussions with the operators in both areas indicated that these are higher incidences of bribing the police, theft of bicycles, and accidents in Mwea compared to Busia.

Boda boda operators have come together in both areas to form association / welfare groups to instil operational discipline in their work as well as collectively deal with problems in boda boda business. The associations also act as control, regulating which routes and how operators behave and treat their passengers. They are registered with Ministry of Social Services within the districts and hence have local jurisdiction. The associations are also important in solving disputes in case of accidents and theft, or among different operators as well as standardising charges chargeable by operators. These also take care of social interest such family tragedies, loss of bicycles, etc. Through associations, members are also able to participate in other income generating activities such as brick-making, livestock keeping and merry-go-round (micro-financing).

3.2.12 Problems encountered

The problems encountered by boda boda operators are in two categories. There are occupational problems in which operators are exposed to dispositions, risks and hazards in their line of work. These include:

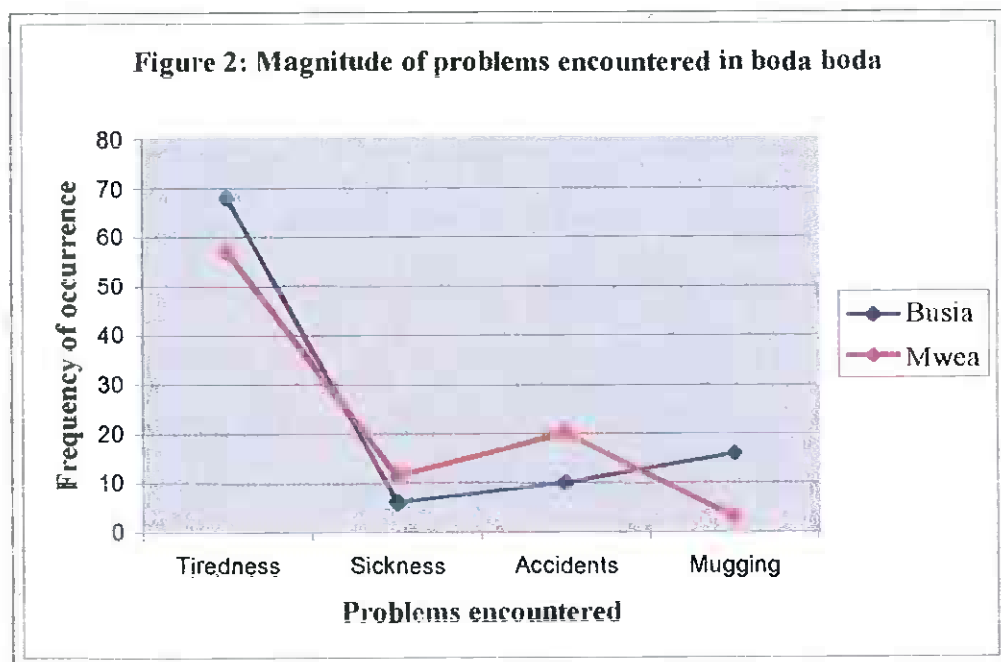
- Fatigue
- Sicknesses (pneumonia, chest pains, etc)
- Sexual inactivity or loss of libido

- Injuries due to accidents

The second category consists of structural problems, which are due to socio-economic circumstances, and/or of physical and political nature and environment such as:

- Assault / mugging/ robbery especially at night by criminals who pose as customers and rob them of their day's collection
- Non-payment by hooligans after they have reached their destination
- Harassment or arrest by police, when they end up carrying criminals on the run without their knowledge
- Harassment by other road users especially public service vehicle drivers
- Accidents due to interactions with other road users, or condition of the road
- Theft of bicycles

The graph below (Figure 2) shows the magnitude of the four commonest problems experienced in boda boda operations in both project areas.



4. Way forward

4.1 Research approach and methodology for boda boda

The novel feature of this development research project should be embedded in tackling rural transport bottlenecks. Central to the success of the rural transport services project is the dissemination of high quality research information and ownership by the communities. Thus, in the principle of promoting learning and development through research, the approach and methodology need to incorporate field-testing of new ideas and technologies drawn out from the scoping study. This is born out of the need to enhance capacities and resources of communities, and develop and integrate best practices within the research areas.

Findings from the study call for more detailed investigation on certain aspects such as:

- Modal split – to show share contribution of bicycles and specifically boda boda to both transport services and overall economy (transport burden, mobility profiles, etc)
- HIV/AIDS contradictions: change of lifestyles with regard to boda boda and socio-economic impacts
- Performance characteristics and cost-benefit efficiencies of boda boda/ bicycles
- Impact of good governance and policy environment on boda boda
- Micro-financing for boda boda business

4.2 Arising research and development issues

4.2.1 Increasing capacity and versatility

The current bicycles used for boda boda is designed to carry only one passenger at a time and the payload is also limited. In case a passenger has a luggage that is too heavy to carry on the back, he/she has to hire another boda boda to carry the luggage. This costs more than twice if he/she never had any luggage. Normally, the charge for moving goods is higher than that for a passenger. This is because unlike a passenger who alights when in hilly or very rough sections of the road, an operator has to move the luggage whatever the condition.

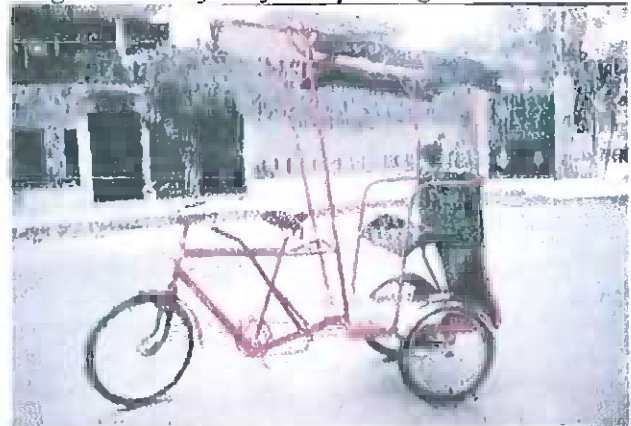


Photo 7: A rickshaw design popular in India

The operators suggested they would happily do work a bicycle with higher capacity and versatility without compromising the on the effort required to do the work. This may be in form of a rickshaw (three wheeled bicycles - Photo 7)) or trailer attached to the main bicycle/ boda boda.

A number of people have also resorted to street hawking using their bicycles as 'walking shop'. Such bicycles have so many modifications made and goods hanging all over it that it is almost impossible to ride them (Photo 8).

In Busia it was noticed that people paid the disabled persons to carry their goods across the border, while they walked. Most of their wheelchairs have been modified to carry up to 50 kg of goods. Despite this cross border transport provision by the disabled on their wheelchair and their number, their activities continue to be ignored as economically inconsequential and they have never been considered as part of boda boda.



Photo 8: Walking shop – bicycle hawking

The challenge is to increase capacity and versatility. To this end, a number of suggestions have been made by operators and

include:

- introducing rickshaws in Mwea, while upgrading boda boda in Busia to motorbikes
- making wheelchairs to be more user friendly to enable the disabled to carry out transport services with ease
- introducing motor-driven bicycles to reduce the amount of effort (suggested by an operator in Mwea who happened to have seen a similar invention in Kisumu)
- making provision for cover during rainy seasons

4.2.2 Participatory dissemination approaches

Many rural areas in Kenya remain remote and cut out from the mainstream activities. Others exhibit gaps between transport needs and requirements of communities and the ability of the existing transport systems to meet these wants. In an attempt to bridge this gap and open remote areas, it is imperative that we transfer a means that would not only be dependable, affordable and available, but that which will also seek to sustainably improve livelihoods of those communities. Nonetheless the views of the intended target groups must be integrated in the decision making process. The present transport crisis has therefore drawn the country's attention to alternative systems, and boda boda may at present and in future amount to a reliable and cost-effective means of transport for many rural and peri-urban and even urban communities.

4.2.3 Partnerships

Other than boda boda operators, a number of partners are important for the success of and full integration of boda boda business. They include:

- Credit providers who are vital to assist those who want to enter into the business but lack the initial capital for purchase of bicycles
- Local bicycle repairers and assemblers
- Communities who not only provide customer service but are necessary to be involved in local road fixing and maintenance.
- Health services providers particularly in ensuring that boda boda operation-related ailments such as pneumonia and chest pains are addressed.

4.2.4 Infrastructure and operational issues

A bicycle lane has been tried in Busia main road and this has reduced accidents tremendously. However, with the increasing number of boda boda in the region, there is a lot of congestion and the lane has suddenly become narrow. There are ideas about doing the same in Mwea with the local member of parliament getting the government involved in this initiative.

4.2.5 Policy assessment and measures

Previously, cyclists were required to have a road license to have a right to use the roads. Being bona fide road users, any misuse on their part or the motorists would have to be proven within the context of the law. This was important in protecting all the road users against any abuse. With the scrapping of that law, cyclists have been exposed to all manner of mistreatment, insult and exploitation to an extent that when one is hit by a motorist, and the car also gets some damage or dent, they are required to repair the car.

There are many other issues that impact on ownership and use of boda boda, and which need attention of policy makers and implementers. They include:

- Control and standardisation in manufacture of bicycles
- Implementation of traffic rules
- Insurance and licensing
- Road designs, classification and community involvement in repairs and maintenance
- Accidents involving IMTs
- Training for operational skills and sensitisation

4.2.6 Cultural orientation

Most transport burden particularly of farm produce is borne by women and girls who carry goods on their backs and heads. Many women are reluctant to use bicycles with high crossbars, which they see as those designed for men. In Busia, many boda boda operators are hired to take children to school, a task which used to be a responsibility of women. Many passengers that they carry are workers/ employees within town, where as in Mwea women are more regular users. Most people who operate boda boda do not consider it as employment since culturally employment is about working in an office. Rather they feel they are into it because of lack of employment opportunities. Generally women are not common boda boda operators due to cultural prejudices.

5 Conclusions

Boda boda contributes significantly to the economies of rural and peri-urban communities in terms of providing for transport services and generating income and employment. Boda boda provides short distance and low capacity services within villages, small urban and peri-urban towns, as well as feeding to major public routes. It also operates in remote rural areas where they provide access to shopping and market centres. On major roads and centres, they complement the services offered by public transport, where as they dominate in routes and areas where public transport is limited. Boda boda has brought about active life to communities, which would otherwise be cut off and not benefit from vital services such as communication, marketing, health, education, etc.

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Appendices

Appendix I: Bicycle household survey

Date: _____ Serial No. _____
Division _____ Location _____ Sub-Location _____

1. Name of Numerator _____
2. Name of household head (hh) _____
3. Status of hh (tick) (a) Married (b) Single (c) Widover (d) Widow
4. Relationship of interviewee to hh (tick)
(a) Son (b) wife (c) daughters
5. Age of interviewee (fill box)
6. Do you have a bicycle (tick) (a) Yes (b) No
7. If yes? How many? (fill)
8. What do you use your bicycle(s) for? (tick)
(a) personal transport (b) crop transport
(c) boda boda (d) children going to school
(e) water collection (f) others specify (i) _____
(ii) _____
(iii) _____
(iv) _____
9. When did you acquire your first bicycle? (fill) _____
10. Give the ages of your bicycle(s) (fill) _____
11. Who owns the bicycle? (tick) (a) hh (b) Son (c) Wife (d) Daughters (e) others (specify) _____
12. Who uses the bicycle? (tick)
(a) hh (b) son (c) wife (d) daughter (e) others (specify) 1. _____
2. _____ 3. _____
13. Is your bicycle used for boda boda? (tick) yes No
14. If yes, how much do you earn (fill) Ksh.
15. If no, why? (tick)
(a) too old (b) difficult job
© have another job (d) others (specify)
1. _____
2. _____
3. _____
4. _____
16. How much do you spend on repairs/spares per month? (fill) _____
17. What is your monthly income (fill) ksh. _____
18. If you use your bicycle for personal transport, where do you go with it? (tick)
(a) church (b) school (c) market (d) hospital (e) funerals
19. What are the main problems with use of bicycle? (tick)
(a) tiredness (b) poor roads (c) accidents (e) theft (f) others (specify)
1. _____
2. _____
3. _____
20. Who repairs your bicycle? (tick) (a) myself (b) my son (c) fund (d) others (specify)
1. _____
2. _____
3. _____
21. Do you use boda boda for your personal transport? (tick) (a) Yes (b) No
22. If yes, what comments do you have on
(a) comfort _____
(b) safety of passenger _____
(c) safety of the boda boda operator _____
23. What message would you have for the following on use of bicycle in your area
a) Police _____
b) Town/county council _____

- c) Ministry of works _____
 d) Local chief _____

Appendix II: Bodu bodu operator questionnaire

Serial No.
 Date _____ Division _____ Location _____ Sub-location _____

1. Name of the Numerator _____
2. Name of Operator _____
3. Who owns the bicycle (tick as appropriate) (1) personal (2) Hired
 (3) father (4) mother (5) others (specify) 1. _____
 2. _____
 3. _____
4. For how many years have you been in the boda boda business?(fill) years _____
5. (a) How old are you? (fill) years _____
 (b) At what age did you join the boda boda trade? (fill) _____
 (c) Are you married? (a) Yes (b) No
 (d) If yes, how many children do you have? (fill) _____
 (e) What is your level of education (a) None (b) Primary (c) Secondary (d) Post-Secondary
6. At what age did you join boda boda business?(fill) years _____
7. When do you carry out your boda boda business (tick) (a) day (b) night
8. If at night why? (tick accordingly) (a) higher income (b) cool weather
 (f) others specify 1. _____
 2. _____
 3. _____
9. For how many years have you been in boda boda business? Years (fill) _____
10. At what age did you join boda boda business (years) fill _____
11. What do you mostly carry (tick)

Item	% of the time
a) passengers	_____
b) luggage	_____
c) livestock/products	_____
d) fish	_____
e) crops	_____
f) others specify 1.	_____
2.	_____
3.	_____
12. If you work at night what are your main problems (tick) and rank
 (1) security (2) family time (3) type of roads (4) quality of bicycle
13. How much do you earn per day (fill) ksh _____
14. How much do you spend on repairs/spares per month (fill) ksh _____
15. Do you pay any levy to (tick accordingly) (1) Yes (2) No
16. If yes to whom? (tick) (a) council (b) welfare association (c) police
17. How many kilometres on average do you travel/day (fill) km _____
18. Do you belong to any Self-Help group? (tick) (a) Yes (a) No
19. If yes why? (tick) (a) welfare activities (b) development activities (c) business security (d) others
 specify 1. _____ 2. _____ 3. _____ -
20. Rank the main 3 problems affecting your boda boda business (specify 1, 2, 3 in boxes)
 (a) tiredness (b) sickness (c) accidents (d) mugging (e) others (specify)
 1. _____ 2. _____ 3. _____
21. Have you discussed boda boda business with (tick) (a) insurance (b) credit
 (c) county council officials (d) police (e) others
 (specify) _____
21. Have you ever lost your bicycle (tick) (a) Yes (b) No
22. If yes how? (tick) (a) theft (b) accident (c) others (specify)
 1. _____
 2. _____

3.

24. in what ways would you reduce your spare/repair costs (tick)

(a) co-own spare shop (b) repair your own bicycle

24. Do you own a bicycle share stand/shop? (tick) (a) Yes (b) No

25. If no how far is the nearest spare shop/stand (fill) kms

26. What modifications/additions do you have on your bicycle? (tick)

(a) cushion on carrier (b) head lamp (c) radio (d) leg resters (e) rear view mirror (f) others (specify) 1. _____

2. _____

3. _____

27. Have you ever experienced any harassment from (tick as appropriate)

(a) police (b) passengers (c) country council (d) motor vehicle drivers

28. In what ways do you hope to progress your business in the next 3 years (tick)

(a) increase of number of bicycles (b) buy a motor cycle (c) buy a pick-up

(d) get another job (e) others (specify) 1. _____

2. _____

3. _____

29. What do your charges depend on (tick) (a) condition of the road (b) type of the load (c) distance (d) contract type of passenger (f) weather

30. Have the number of vehicles on the route you operate (tick)

(a) increase (b) reduced (c) co-existed

31. Have you ever ferried any of the following people (tick) (a) pregnant mother (b) sick person (c) disabled person (d) administrator/police

32. How has boda boda affected your time? (tick)

(a) increase time available for other activities

(b) reduced time available for other activities

33. How could you improve your bicycle for it to work better?(propose)

(a) _____

(b) _____

(c) _____

(d) _____

34. Are you affected by? (tick)

(a) dust Yes No

(b) vehicle fumes Yes No

(c) heat Yes No

35. How could your bicycle be made more user friendly for

(a) women

(i) _____

(ii) _____

(iii) _____

(iv) _____

(v) _____

(b) children

(i) _____

(ii) _____

(iii) _____

(iv) _____

(c) livestock

(i) _____

(ii) _____

(iii) _____

(iv) _____

(d) sick or handicapped

(i) _____

(ii) _____

(iii) _____

(iv) _____