ROAD MANAGEMENT AND FINANCING – THE UGANDA EXPERIENCE IN THE IMPLEMENTATION OF ROAD USER CHARGES

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ABSTRACT

Uganda has a total road network of approximately 35,700 km (excluding community roads) of which about 8 % is paved. The classified road network consists of about 9,500 km (of which 24 % is paved), but which accommodated 57 % of the travel in Uganda (in terms of million vehicle-kilometres per year). In order to maintain and improve this major network, the Government of Uganda (GOU) has prepared a 10-year Road Sector Development Program (RSDP), stretching between 1996/7 and 2005/06.Expenditure under this program would amount to some US$ 1,397 million already committed. Of the US$ 1,397 million already committed about US$ 783 million has been allocated through international donor commitments and US$614 from Government of Uganda (GOU) commitments.

To manage the anticipated increase in expenditure of roads, but also to ensure greater efficiency, the GOU has not only decided to establish commercially orientated Roads Agency in the immediate future, but to commercialise the whole road sector.

A study was consequently commissioned by the Ministry of Works, Housing and Communications, funded by the World Bank, to assess the existing Road User Charges (RUC) system used in Uganda and its equity in terms of the costs each category of user imposes on road infrastructure and on other road users. The study also has to make recommendations as to the required adjustments in the existing system, including the identification of more appropriate instruments to raise revenue towards a more efficient, equitable and more effective framework. The options to link the revenue raised through appropriate road user charging instruments to expenditure on roads i.e. the user-pay or fee-for-service principle also had to be exploited under the study.

This paper highlights the major findings of the study and discusses the lessons learned and the way forward in terms of the commercialisation of the road sector in Uganda.

1 BACKGROUND

Uganda has a total road network of approximately 35,700 km (excluding community roads) of which about 8% is paved. The classified road network consists of about 9,500 km (of which 24% is paved), but which accommodates 57% of the travel in Uganda (in terms of million vehicle kilometres per year). In order to maintain and improve this major road network, the Government of Uganda has prepared a 10-*year Road Sector Development Program (RSDP)*, stretching between 1996/97 and 2005/06.

Expenditures under this program would amount to some US$ 1.88 billion of which US$ 1,397 million is already committed under the *Transport Sector Investment and Recurrent Expenditure Plan (TSIREP),* and a further US$ 483 is planned. US$ 228 million was invested during the period 1996/97 to 1998/99. The budgeted expenditure for the 1999/2000 financial year was a record high of US$192 million. Of the US$ 1,397 million already committed about US$ 783 million has been allocated through international donor commitments and US$614 from Government of Uganda (GOU) commitments. The TSIREP planning implies a gradual increase from a spending of US$ 70 million per annum in 1996/97 to US$ 260 million per annum in 2002/03 – an increase of 270% over a period of 6 years.

To manage the anticipated increase in expenditure on roads, but also to ensure greater efficiency, the GOU has not only decided to establish a commercially orientated Road Agency in the immediate future, but to commercialise the whole road sector. A project team was consequently appointed to assess the existing *Road User Charges (RUC)* system used in Uganda and its equity in terms of the costs each category of user imposes on road infrastructure and on other road users. The project team also had to make recommendations as to the required adjustments in the existing system, including the identification of more appropriate instruments to raise revenue towards a more efficient, equitable and cost-effective framework.

2 UGANDA: DEMOGRAPHIC AND ROAD NETWORK CHARACTERISTICS

The population of Uganda amounts to approximately 21 million people which lives on 196,000 km^2 land at an average density of 107 persons / km^2 - 14% of the population lives in urban and 86% in rural areas. Kampala, the Capital, has a population of 0.9 million and a density of 5,300 people / km^2.

2.1 ROAD NETWORK

Apart from the 9,500 km classified road network, Uganda is also served by a rural feeder or district road network of approximately 23,200 km, an urban road network of approximately 3,000 km, and a community road network of approximately 30,000 km. The total road network is thus about 65,700 km (35,700 km excluding community roads). About 8% of the main (excluding community roads) road network is paved, 47% is gravel roads and 45% is earth roads.

The density of the main road network is about 0.6 km per 1000 of the population. This density applies to both the rural and urban areas. Almost 24% of the classified roads are paved, i.e. 2,200 km, which together with almost 600 km of paved urban roads serves the bulk of the traffic demand. No district or community roads are paved. The composition of the current main road network is shown schematically in Figure 1.

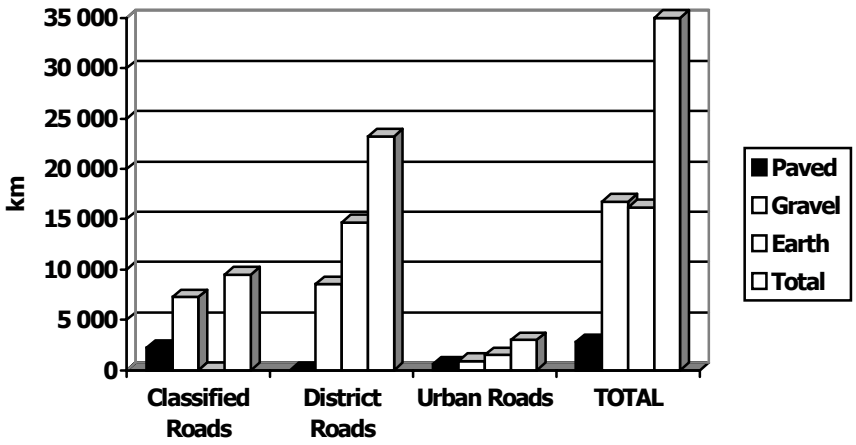

Figure 1 - Composition of the main road network

About 74% of the classified road network is in a fair and good condition, compared to 49% of the district roads, and 41% of the urban roads. The main (excluding community roads) road network can be described as 55% fair and good, and 45% poor and very poor. The current condition of the road network is shown schematically in Figure 2.

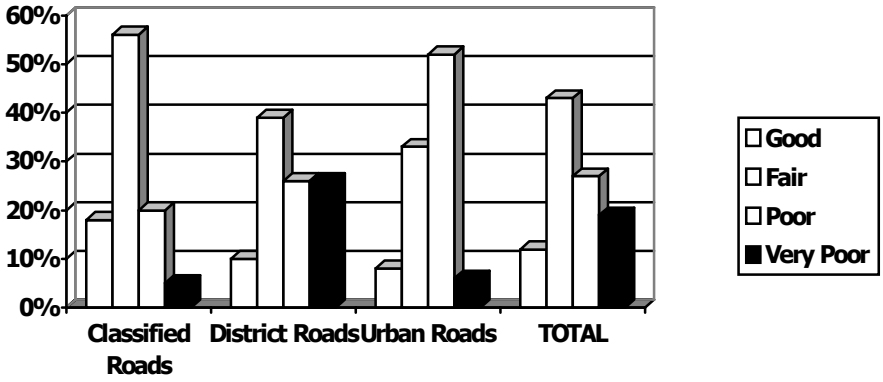

Figure 2 ; Current condition of the road network

2.2 ROAD USAGE

The 1998 vehicle population in Uganda was approximately 180,000 vehicles. The growth in the overall vehicle fleet in Uganda was 18% per annum during the last decade (1988 – 1998) and 22% during the last 3 years (1995 – 1998). Motorcycles account for 35% of the vehicle fleet and have grown a massive 31% per annum during the last decade. The average vehicle ownership in Uganda is about 8 vehicles per 1000 of the population.

Approximately 2.6 million vehicle-kilometres are travelled per year on the Uganda road network of which 66% is on the Classified Road Network and 16% on the Kampala Road Network. In total, 68% of the vehicle kilometres travelled (VKT) are travelled on paved roads. Average daily traffic (ADT) volumes are about 1,715 on the paved network, 105 on the gravel network, and 35 on the earth network. The weighted average daily traffic volume for Uganda is 200.

2.3 DEMOGRAPHIC, ROAD NETWORK, AND ROAD USAGE COMPARISON WITH OTHER COUNTRIES

The demographic and road sector characteristics (baseline 1996) of a few countries in the region are compared in the following table.

This table shows:

- Uganda has slightly more vehicles per population and per km main roads than Tanzania but significantly less than Kenya.
- The road network of Uganda is denser than Kenya in terms of km main roads per land area, but less dense in terms of people.
- The fuel sales of Uganda are about 35% less than Kenya in terms of litres per km main roads.
- The normalised road index of Uganda is only 55% - i.e. 45% less than the norm for countries with similar characteristics.

Table 1: Demographic, road sector road usage characteristics of selected African countries

PARAMETER	S A	NAMIBIA	KENYA	TANZANIA	UGANDA
Land area (1000 sq km)	1,221	823	569	884	196
Population (X 1000)	47,000	1,642	25,480	30,000	19,000
Population density (people / sq km)	38.5	2.0	44.8	33.9	96.9
Vehicle fleet (vehicles excluding motorcycles)	5,667,000	135,206	359,000	139,000	89,200
Main Roads (km)	534,131	63,258	63,800	88,200	34,000
% Paved	11.8	8.3	13.9	4.2	7.5
Vehicles / 1000 people	121.2	82.3	14.1	4.6	4.7
Vehicles / km road	10.6	2.2	5.6	1.6	2.6
Passenger vehicles / 1000 people	85.6	45.6	10.9	0.8	2.6
Density km / sq km	0.44	0.08	0.13	0.09	0.17
Density km / 1000 people	11.4	38.5	2.5	2.9	1.8
Petrol sales (million litre)	7,960	385	380		182
Diesel sales (million litre)	7,881	382	498		124
Fuel sales (million) litre / 1000 vehicles	2.8	5.7	2.4		3.4
Fuel sales (million) litre / 1000 km main roads	29.7	12.1	13.8		9.0
Expenditures on roads million SDR's	500	45	200	160	
Normalized road index (1)	115	199	117	82	55

(1) Normalized road index - an index of 100 indicates an adequate road network based on various indicators such as topography, demography, socio-economic characteristics, natural resources, and other economic indicators

This table shows:

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- The fuel sales of Uganda are about 35% less than Kenya in terms of litres per km main roads.
- The normalised road index of Uganda is only 55% - i.e. 45% less than the norm for countries with similar characteristics.

2.4 ROAD INSTITUTIONAL RESPONSIBILITIES

The government structure of Uganda consists of two tiers, namely Central Government (GOU) and Local Government (LG). The GOU execute its functions through Ministries, which receive their mandates from Parliament. The local government structure consists of 45 districts governed by autonomous District Councils, and 64 urban areas governed by autonomous Urban Councils – Kampala is included in both counts. The Urban Councils consist of 1 City Council (Kampala), 12 Municipal Councils and 51 Town Councils (16 with populations greater than 10,000 and 35 with populations less than 10,000).

The Ministry of Works, Housing and Communication (MOWHC) is responsible for the planning, development and maintenance of the classified road network in Uganda. In an interim step before a fully commercially orientated Road Agency is established, a *Road Agency Formation Unit (RAFU)* was formed to manage the road sector within the *Ministry of Works, Housing and Communication (MOWHC)*. RAFU is the nucleus of the planned *Road Agency.*

The Local Government Act of Uganda was promulgated in 1997 to decentralize functions, powers and responsibilities, including the devolution of road maintenance services of rural district or feeder roads, urban roads, and community roads to local and urban authorities. Although this act allows districts to fully implement routine and periodic maintenance activities, rehabilitation is still handled by the Central Government through the MOWHC.

2.5 ROAD SECTOR FUNDING

2.5.1 Revenue

The Finance Act that is promulgated every year regulates taxes, duties and levies. The *Uganda Revenue Authority (URA)* collects the revenue on a mandate from the *Ministry of Finance, Planning and Economic Development (MOFPED)*. All revenue goes to a consolidated fund from where funds are apportioned on the basis of an annual budget – the first priority being recurrent and the second development expenditures.

The total revenue of GOU during the 1998/1999 financial year was approximately UShs 990.5 billion (Uganda shillings) i.e. US$ 660.3 million. The relative contribution of various tax instruments is shown schematically.

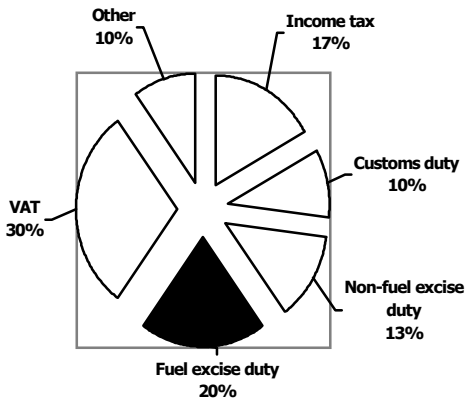

Figure 3: Relative contribution of the various tax instruments

During the past three financial years (1996/97 to 1998/99) the petroleum duty has accounted for approximately 22.8% of the total revenue of the government. License fees in terms of the Traffic Act has accounted for another 2.1%. The income from these two sources has thus amounted to about 25% of total government revenue during the 1996/97 to 1998/99 financial years, which is UShs 633 billion (US$ 576 million) over three years or UShs 211 billion (US$ 192 million) per annum on average.

2.5.2 Expenditure

The budget allocation of the GOU to the roads sector during the period 1996/97 to 1998/99 was approximately UShs 145 billion (US$ 132 million) or UShs 48 billion (US$ 44 million) per annum on average. Donor funding during the same period has amounted to UShs 107 billion (US$ 97 million). During the 3 years from 1996/97 to 1998/99 approximately 23% of the revenue from fuel (excise duty) and license fees was thus re-invested in the road sector. Taking into account donor funding however, increases the actual investment in the road sector to 40% of the revenue from these two sources.

The investment priorities for the road sector during this 3-year period resulted in the following expenditure:

- 36% classified road maintenance;
- 42% classified road improvement;
- 18% district roads;
- 1% urban roads; and
- 2% institutional and capacity building.

Road Sector expenditure increased dramatically as a result of the institution of the Road Agency Formation Unit (increase in the capacity to implement road improvements) during the 1999/2000 financial year to approximately UShs 287 billion (US$ 192 million) per annum of which 61% is donor funding and 39% funding by the GOU.

3 NATIONAL AND ROAD SECTOR POLICY

The Government of Uganda clearly recognises the direct linkage between economic development and an effective and adequate road system. Four policy areas define a broad policy framework, namely:

- Commercialisation;
- Cooperation in infrastructure and services;
- Utility reform; and
- Macro-economic considerations.

The Ugandan Government's commitment towards commercialisation and the establishment of an autonomous Road Agency is illustrated by the establishment of the Road Agency Formation Unit (RAFU) in September 1998, as a forerunner for a Road Agency. The importance of regional co-operation is underpinned in a number of international treaties adopted by member states of Eastern Africa:

- The Treaty for the Establishment of the East African Community (EAC);
- The Treaty Establishing The Common Market For Eastern And Southern Africa (COMESA); and
- The Northern Corridor Arrangement.

The economy reacted very favourably to the economic reform programmes and Uganda has been singled out as one of the IMF/World Bank “star” economic performers for the past 10 years. In fact Uganda is regarded as a success story of Economic Structural Adjustment Programmes (ESAPs) in Sub-Saharan Africa.

4 PROPOSED NEW ROAD MANAGEMENT AGENCY AND FUND ADMINISTRATION

The management and institutional aspects of the proposed new road management agency and fund administration are the following:

4.1 MANDATE

4.1.1 Uganda Road Fund Administration (URFA)

The mandate of URFA, to be executed by means of its Board is to manage the Road Fund (Account) according to commercial principles, to enable effective, efficient and stable road expenditures through the implementation of a system of road user charging.

4.1.2 Uganda Road Management Agency (URMA)

The mandate of URMA, to be executed by means of its Board, is to manage the provision and maintenance of the classified road network in Uganda through efficient and stable road expenditure, and to render advisory services to local authorities on urban, secondary, and tertiary roads.

4.2 KEY FUNCTIONS

4.2.1 Uganda Road Fund Administration (URFA)

The key functions of URFA are the following:

- To collate the approved business plans (expenditure programs) received from the various road implementing agencies;
- To compare and reconcile these approved business plans (expenditure programs) with the output of the Uganda Road User Charges Model;
- To determine the road tariff to match the approved road expenditure programs on an annual basis;
- To submit the road tariff to the Minister of Finance for final approval and implementation;
- To oversee the efficient collection of the road tariff on contract;
- To operate and manage the Road Fund Account according to commercial principles;
- To define the financial procedures to be followed by the road implementing agencies receiving money from the fund;
- To disburse funds to road implementing agencies on the basis of approved business plans (expenditure programs); and
- To manage the day-to-day affairs of the Road Fund, oversee the auditing of the Road Fund account, and prepare an annual report to government.

4.2.2 Uganda Road Management Agency (URMA)

The key functions of URMA are the following:

- The identification of road maintenance, rehabilitation and development needs for the classified road network;
- The preparation of an annual business plan (expenditure programs) which will reflect the identified needs, will take into account strategic considerations for the development of the classified road network, and will include a five year programme and annual budget for the maintenance and development of the classified road network;
- The submission and motivation of its business plan to the URFA;
- The planning, design, and construction of the identified classified road network in accordance with the approved plans;

- The execution of a quality assurance role for Local Government (in keeping with Section 97 of the Local Governments Act of 1997);
- The control of overloading of heavy vehicles using its network; and
- The preparation of an annual report to government via MOWHC.

4.3 OVERSIGHT ARRANGEMENTS

Oversight should be provided by appointing an executive Board to manage the Administration and Agency through a secretariat.

4.4 NEED FOR NEW LEGISLATION

4.4.1 Background

It is a general requirement under the laws of Uganda that any new measures which introduce new taxes or charges upon the citizen or which change the nature of the citizen's financial liability to the State cannot be introduced administratively. An Act of Parliament must first be passed. The change proposed in this study will entail the introduction of new charges and the re-arrangement of existing ones. This calls for a new Act of Parliament. These changes cannot even be introduced by subsidiary legislation as a Minister cannot impose new burdens on the citizen unless specifically authorised to do so by Parliament (see Article 152 of the Constitution). There is currently a misalignment between GOU's initiatives towards decentralisation and privatisation, and present legislation. This viewpoint seems to support the notion of developing new legislation for the creation of the proposed new funding and management mechanisms.

New legislation enacted by Parliament will be required to establish the Uganda Road Fund Administration (URFA) and the Uganda Road Management Agency (URMA).

4.4.2 Uganda Road Fund Administration (URFA)

This proposed agency of the Government would be empowered to receive and expend moneys, which are under the current laws of Uganda destined for the Consolidated Fund. Under the Constitution of the Republic of Uganda, all public funds unless provided otherwise by an Act of Parliament must be contributed to the Consolidated Fund and can only be expended in accordance with the usual Government budgetary and appropriation procedures (see Articles 153 – 156 of the Constitution). For URFA to be effective, therefore, there is a need for new legislation to be enacted setting up the body and giving it functions and powers.

4.4.3 Uganda Road Management Agency (URMA)

While it is possible to establish a service delivery agency or department of Government administratively, it is not necessarily always the best option. It is recommended that URMA be established by legislation to:

- Give it a measure of administrative autonomy.
- Make it more flexible in terms of operations and dealings with the business sector and external donors.
- To enable it to complement URFA.

New legislation is required, therefore, to give it legal personality to enable it to perform the functions proposed in this study.

5 ROAD USER CHARGES MODEL

5.1 MODELLING

Road user charging is based on the principles of full cost recovery, efficiency and equitability. The calculation of a road tariff is thus simplified by the development and use of an appropriate model. The purpose of this model is primarily to allocate cost to users of diesel and petrol driven vehicles, and various vehicle classes proportionately to vehicle-kilometres travelled and equivalent standard axle loads, using the principles mentioned above.

5.2 RECONCILIATION AND BALANCING OF MODEL - FUEL SALES

The existing fuel sales do not correspond with the existing estimated fuel consumption, i.e. the existing vehicle fleet should be using much more fuel than indicated by the actual fuel sales. An investigation showed that this phenomenon could largely be explained by the huge differences in fuel prices in the region, i.e. Uganda fuel is much more expensive than that of its neighbours.

The higher fuel prices in Uganda distort free market conditions resulting in fuel smuggling and an "outflow" of fuel, i.e. vehicle-kilometres travelled in Uganda with fuel bought outside the country. This phenomenon was confirmed by SHELL, the largest oil company operating in Uganda (37% of the oil market).

The total loss in potential sales is thus 97.5 million litres diesel and 40.7 million litres petrol per annum. This estimated situation is shown schematically in Figure 4.

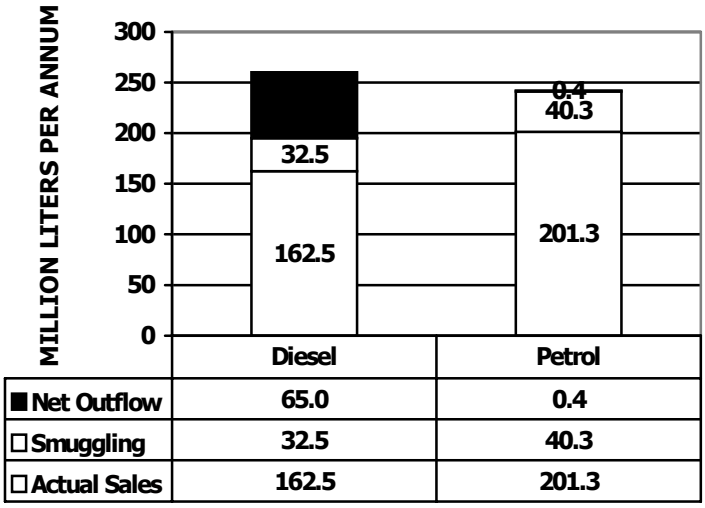

Figure 4 - Estimated potential fuel sales

The assumptions on the net-outflow of fuel, i.e. kilometres travelled in the country with fuel purchased outside the country, is based on the following logic:

- Large discrepancies in the fuel prices of Uganda and its neighbouring countries exist;
- The aggregate sum of the sizes of fuel tanks of vehicles crossing the borders annually translates to the estimated 65 million litre diesel and 0.4 million litre petrol;
- Kampala, the economic heart of Uganda, where most of the economic activities are taking place, is located within easy reach from the Kenya border for a two-way trip by a heavy vehicle with a filled fuel tank;

- Even longer distance transit trips through Uganda will save considerable amounts if the heavy vehicles filled their on-board tanks outside the country – the larger articulated trucks can accommodate up to 2,400 litres on-board (the potential savings on one fuel tank is thus almost one million shillings (based October 1999 diesel price differential between Uganda and Kenya)); and
- Personal interviews conducted at the borders with Kenya (Malaba and Busia) confirmed that the inbound vehicles are all fully filled.

Confirmation on the large distortions in fuel sales in the region - due to large disparities in fuel prices – are also found by comparing the growth in the domestic vehicle fleet (excluding motorcycles) with the growth in diesel and petrol sales over the past 10 years. The average growth per annum of the vehicle fleet was 16.4% p.a. compared to only 4.4% p.a. in fuel sales. The vehicle fleet has consequently increased during this period with a factor of 4, while the fuel sales has only increased with a factor of 1.5.

6 RECOMMENDED ROAD TARIFF

The recommended road tariff includes a range of instruments resulting in the most equitable recovery of cost by means of the road tariff.

The following instruments are included:
- License Fees;
- Temporary License Fees (border charges);
- Fuel Levy;
- On-board Fuel Levy (border charges); and
- Overloading Penalties.

6.1 LICENSE FEES

The Road User Charges Model shows clearly that the fixed costs cannot be recovered from license fees alone, based on the affordability by the road user. License fees are generally payable annually, six monthly, or quarterly, resulting in large single payments as opposed to a fuel levy for which small payments are made over time.

It is hence proposed that only 30% of the fixed costs be recovered from license fees and the remainder by means of the fuel levy. Given the administrative complexities of weight-distance charges to recover variable load related costs, it is furthermore proposed that an additional heavy vehicle license fee be introduced to recover these costs. Affordability however again limit the use of this instrument to recover only 50% of the load related costs, while the remainder should also be recovered by means of the fuel levy.

The road tariff in terms of license fees amounts to US$ 19.34 million (US$ 15.99 million in terms of license fees and US$ 3.35 million in terms of heavy vehicle license fees).

6.2 TEMPORARY LICENSE FEES AND HEAVY VEHICLE LICENSE FEES

The introduction of temporary license fees is important to discourage foreign registrations of the domestic vehicle fleet and to ensure that foreign vehicle pay their fair share. It is especially important given the gross mismatch in the relative sizes of the vehicle fleets of Uganda and especially Kenya - ±100,000 versus 360,000 (excluding motorcycles) – and the negative trade balance of Uganda with Kenya.

An estimated US$ 0.40 million in terms of temporary license fees and US$ 0.82 million in terms of temporary heavy vehicle license fees will be recovered. However, since the information available from the border posts is very limited, it is expected that these amounts are very conservative (and will most likely be higher).

The proposed structure for temporary license fees to be introduced at the border posts is as shown in Table 2 below:

Table 2: Temporary license fee structure

OPTIONS	VALID FOR PERIOD	RATE
OPTION 1 Temporary vehicle license fees Temporary heavy vehicle license fees	12 months	Equal to 70% of domestic vehicle and heavy vehicle license fees
OPTION 2 Temporary vehicle license fee Temporary heavy vehicle license fees	6 months	Equal to 35% of domestic vehicle and heavy vehicle license fees
OPTION 3 Temporary vehicle license fee Temporary heavy vehicle license fees	3 months	Equal to 17.5% of domestic vehicle and heavy vehicle license fees
OPTION 4 Temporary vehicle license fee Temporary heavy vehicle license fees	1 month / single entry	Equal to 10% of domestic vehicle and heavy vehicle license fees

6.3 DOMESTIC FUEL LEVY

A diesel levy of 13.4 US cent/litre and a petrol levy of 16.6 US cent/litre is recommended as road user charges. An estimated revenue of US$ 20.80 million in diesel levies and US$ 33.57 million in petrol levies will be recovered. The total estimated proposed revenue from domestic fuel levies is thus US$ 54.4 million.

6.4 ON-BOARD FUEL LEVY

This levy is based on an estimated average fuel tank size for every vehicle class. Only 70% of the relevant fuel levy, i.e. 70% of 13.4 US cent/litre for diesel and 70% of 16.6 US cent/litre for petrol, are recovered. It therefore includes an allowance for not fully filled fuel tanks as well as tanks smaller than the average sizes assumed. An estimated US$ 5.08 million in terms of on-board diesel levies and US$ 0.06 million in terms of on-board petrol levies will be recovered.

6.5 OVERLOADING PENALTIES

Overloading is an extremely serious offence and the current situation in Uganda in this regard is very grave – more than 40% of all articulated trucks are overloaded at an average of almost 30% of the legal limit. This increases the damage to road pavements (as well as reduces the life of pavements) with a factor of about 2.5. Overloading penalties are thus proposed as a road user charges instrument to reduce and eventually eliminate this unwanted situation. No attempt was made to estimate the potential revenue from this instrument since successful enforcement will gradually decrease this revenue.

6.6 IMPLICATIONS OF THE RECOMMENDED ROAD TARIFF FOR THE FISCUS AND THE MACRO ECONOMY

The proposed diesel levy of 13.4 US cent/litre compares to implied diesel fuel levies for the period between 1999/2000 and 2005/06 of between 12.2 US cent/litre and 17.9 US cent/litre. Similarly, the proposed petrol levy of 16.6 US cent/litre compares to implied petrol fuel levies for the period between 1999/2000 and 2005/06 of between 19.2 US cent/litre and 28.0 US cent/litre. The recommended increases in license fees and the introduction of new temporary license fees and on-board fuel levies at the border posts will result in more revenue from the fuel excise tax – after deduction of expenditure on roads - being available to Central Government for expenditure on other sectors. This difference is estimated at about 10%. The Fiscus will thus receive the same revenue, after expenditure on roads, with a 10% lower fuel excise tax.

The introduction of the road user charging system will result in large benefits to the economy. The benefits, discussed in this report, are subsequently summarised:

- Sustainable financing of road infrastructure is of the utmost importance for economic growth and development:
  - The direct economic benefits of a sustainable situation with regards to road infrastructure have been proven again and again as substantial - remember that US$ 1 not spent on required road maintenance today will cost the road user US$ 3 in additional vehicle operating cost tomorrow.
  - The proposed road user charging system will ensure sustainable road sector financing as far as all recurrent expenditures are concerned. The system WILL NOT detract financing from other sectors, and it will recover cost from road users in an equitable way. The proposed system imitates free market conditions by creating surrogate market discipline for greater efficiencies and effectiveness in the road sector.
  - Lastly, a holistic approach is adopted to ensure that funding is expended on the various road networks, i.e. classified, district, urban, and community, in proportion to the actual consumption by the road user (local government roads on a 50/50 cost-share basis).

- Overloading: The tremendous negative impact of overloading cannot be emphasised enough. The heavy vehicle fleet operating in Uganda is destroying the road infrastructure, and it can be argued the economy, at a rapid pace. The introduction of a road user charging system gives an opportunity to introduce an appropriate overloading control system to stop this trend.

- Reduction in fuel excise tax - a reduction of 10% in the fuel excise tax simultaneously with the introduction of the road user charging system may result in large benefits to the economy:
  - Accelerated economic growth due to reduced production costs;
  - Increased revenue to the fiscus due to less smuggling; and
  - Increased revenue to the fiscus due to a reduction in the net outflow of fuel (fuel bought outside Uganda for travelling inside Uganda).

6.7 THE IMPACT OF PROPOSED BORDER CHARGES ON REGIONAL TREATIES

The recommendations by this Study in terms of border charges can be construed by many as a contravention of the conditions and stipulations of the various Treaties in the region, most notably the EAC, COMESA and the Northern Corridor Arrangement.

The following should however be weighed in this regard:

- The recommended border levies are road user charges, which are equivalent to the charges, levied on domestic road users, i.e. it does not penalise foreign road users or discriminate against them. Exactly the same principles are applied to both domestic and foreign road users, and will only result in the recovery of actual costs by foreign road users (i.e. users of vehicles not registered in Uganda).
- If the border charges are not instituted, it will mean that the domestic road charges must be increased to compensate for this loss. The relatively small domestic vehicle fleet will then subsidise foreign road users, which is not equitable.
- The drive to commercialise the road sector is aimed at improved efficiencies and lower costs in the road sector, resulting in an improved road network. Foreign road users will thus benefit directly from these changes in the management and financing of the road sector.
- Only the proposed on-board fuel levy is "new", since all the other border charges exist currently in some form.
- The question could rightfully be asked whether Uganda can be denied the opportunity to commercialise its road sector, especially if it is taken into account that Uganda is not comparable to Kenya and Tanzania in terms of its physical and economic characteristics.
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Nevertheless, any changes in existing border charges will be sensitive and must be dealt with accordingly.

7 CONCLUSIONS

The following conclusions can be made:

- Fuel smuggling is a serious problem and will only be addressed if fuel prices are harmonised in the COMESA region;
- Overloading remains a significant threat to the proper maintenance of the Uganda road network and should be addressed;
- Although the theory recommends that fixed road user charges instruments are used for fixed costs and variable instruments for variable costs it is not practical as the fixed costs are too high in relation to the potential and realistic revenue that cab be obtained from fixed instruments;
- The road user already pays more than their fair share but funds are not allocated to roads i.e. the road user subsidises other government expenditure e.g. education, health etc.;
- Only a small percentage of the taxation currently paid needs to be ring fenced to keep roads in an acceptable condition;
- It is very difficult to implement toll roads, given the low traffic volumes and inadequate access control along the majority o the road network;
- Ninety (90%) of travel takes place in urban centres and cross-subsidisation to maintain rural network is essentially required) if the border charges are not instituted, it will mean that the domestic road charges must be increased to compensate for this loss. The relatively small domestic vehicle fleet will then subsidise foreign road users, which is not equitable.

ROAD MANAGEMENT AND FINANCING – THE UGANDA EXPERIENCE IN THE IMPLEMENTATION OF ROAD USER CHARGES

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Name **DANIËL A WEPENER**

KEY QUALIFICATIONS

André Wepener joined BKS in 1988 from Anglo American Corporation. Since 1988 he worked full time in the Transportation Division and he obtained the MEng (Transportation) degree cum laude with part time study in 1989 and 1990. He registered as a professional engineer in 1991 and was appointed as a Chief Engineer in 1992. He left the country in 1993 to work with Mott MacDonald in London and returned in 1995 to become an Associate soon afterwards. In 1998 he was promoted to Divisional Director in the Transportation Division of BKS. He was a part time lecturer at the Rand Afrikaans University during 1997-1998 where he lectured in Transportation Engineering, Urban Engineering and Civil Engineering Design.

Over the last 10 years he gained experience in economic/financial analyses, traffic management systems, transportation corridor studies, and transportation planning and traffic engineering studies which included inter alia traffic counting strategies, toll feasibility and toll strategy studies, road user charges studies, traffic management systems, traffic impact studies, traffic signal optimisation, transportation systems management, bus and high occupancy vehicle priority studies, public transport studies and transportation modelling and planning and the preparation of transport plans.

Name **PIETER KRUGER**

KEY QUALIFICATIONS

Pieter Kruger joined BKS in 1981 during his second year graduate studies at the University of Pretoria. Since 1986 he worked full-time in the Transportation Division and obtained the degree MEng (Transportation) from RAU with part time study during 1986 and 1987. He left the country during the middle of 1988 to study at the University of California in Berkeley and obtained the degree MEng (Transportation) at the end of 1989. During the same period he conducted research at the Institute for Transportation Studies (ITS) in Berkeley.

He is registered as a professional engineer (No. 910114) during January 1991 and was soon afterwards appointed as Chief Engineer. In 1993 he was promoted to an Associate and in 1994 to a Director in the Transportation Division of BKS. In 1997 he was appointed a Director of BKS (Pty) Ltd. He left BKS in 1998 to start TECHWORLD, a company specializing in integrated development solutions, with reference to the fields of Engineering, Management, Spatial Planning and Economics/Finances.

In his earlier career he specialised in the planning and design of traffic control operations and systems, as well as in transportation planning and modelling. He had obtained comprehensive experience in the total field of transportation planning and traffic engineering while working in the transportation discipline the past 12 years.

Throughout his career he has been particularly interested in financial management as well as economic viability analyses and has executed many studies and investigations in this regard. He regularly acts as project manager and team leader in the execution of multi-disciplinary projects and studies. He also has a formal training in macro-economy, transportation economy, financial management, accounting and project management as part of his masters degrees in transportation, engineering, and business administration.