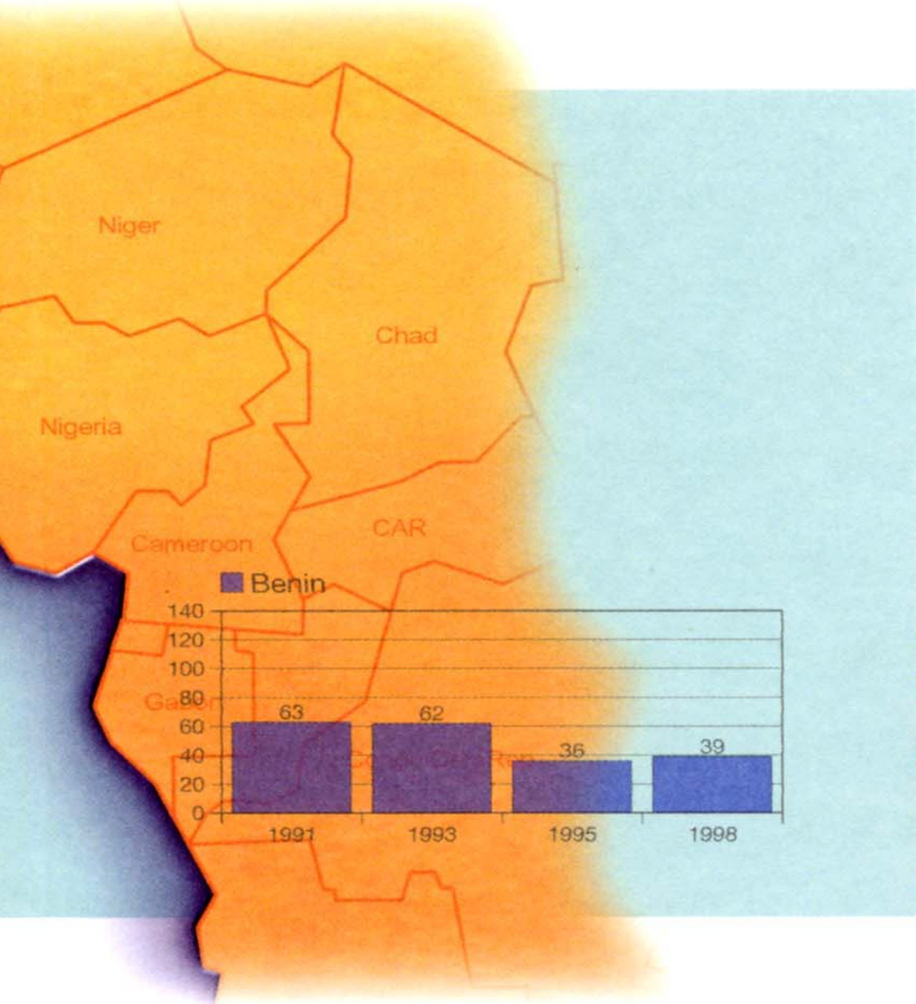
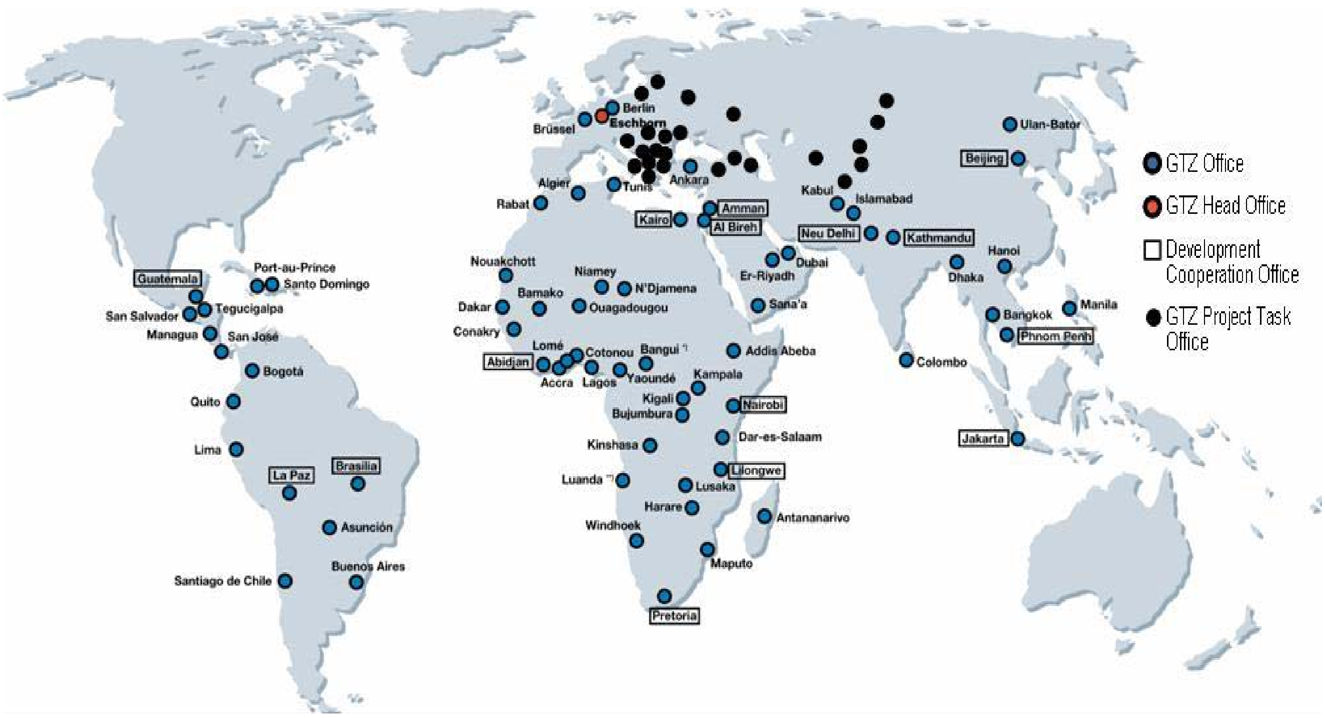


Financing Road Maintenance

in West Africa

by Dr Gerhard P. Metschies
and Eugène Rausch

German Technical Cooperation
www.gtz.de/roads



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The printed version of the book is available at:

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TABLE OF CONTENTS

ANNEXES

ACKNOWLEDGEMENTS

This paper has been financed by the Ministry for Economic Co-operation and Development of the Federal Republic of Germany and prepared by the German Technical Cooperation GTZ. The main authors are **Dr Gerhard Metschies (gerhard.metschies@gmx.de)**, a GTZ-official, and **Eugène Rausch**, an independent engineer.

The views expressed in this paper reflect the author's own opinions and are not necessarily those of GTZ.

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Eschborn (Germany) and Wahl (Luxembourg), September 1996

INTRODUCTION

This book on **FINANCING ROAD MAINTENANCE** in African developing countries addresses the basic issue of sustainable development and the financial sustainability of the most important part of transport infrastructure: the road system.

The new approach of this book is simultaneously a very modern and a conservative one: it considers the roads as a major asset of the wealth of nations and the road users as the group which has to pay for the services from which it benefits.

At the same time, however, this book is to be considered also as an African one, and this in three different ways. Its starting point is the financial crisis of African governments for which viable solutions in financing road maintenance are indicated. The second aspect is the need for solidarity between rural and urban populations in Africa and an adequate balance between national, regional, rural and urban roads, for which the sector approach (which limits the cross-subsidisation to the surplus of other road sub-sectors) is considered the appropriate solution. But the third issue may be the most demanding one: fostering the necessary sense of ownership and responsibility for roads, which is thought to be the core problem in the African context.

Therefore, this book methodologically follows two approaches, which are outlined in detail in special annexes: the rational approach showing a complete set of Road Fund and Road Authority Legislation of African Countries (together with statistics an fuel prices world-wide), as well as the traditional approach displaying a Strategy of Public Relations aiming at emotionalising the road maintenance problem and its solutions in an attempt to reach the very heart of the people concerned - an indispensable factor for achieving sustainable development.

EXECUTIVE SUMMARY

Due to the **lack of road maintenance**, the losses of existing roads during the past number of decades were greater than all financial commitments even of the World Bank in this sector designed to reverse this negative trend. Also the European Union as the most important donor in the African roads sector called for a RADICAL CHANGE OF APPROACH[1].

Particularly in **Africa**, inadequate road maintenance has proved to be the major obstacle to national and economic development.

In the context of the Road Maintenance Initiative for Africa (RMI), this problem has been addressed and it has been shown that **financing and organising road maintenance** is to be considered as the core problem.

Based on the extensive commitments and experience of the **German Technical Cooperation GTZ**, the present study focuses an the financing of road maintenance and its organisation, with special regard to the detailed findings from the following 12 West and Central African countries: Ivory Coast, Ghana, Togo, Benin, Nigeria, Cameroon, Central African Republic, Chad, Niger, Burkina Faso, Mali and Sierra Leone.

A. The most important Results for Organising and Financing Road Maintenance in African Countries

1. **Organisational Aspects**
2. **Financial Aspects**

B. Summary of Conditions in West African Countries

1. **Political and Historical Background**
2. **The Issue of Fuel Smuggling**

C. General Conclusions to be drawn from the Study

1. **Subsidisation**
2. **Taxes**
3. **Fuel Prices**
4. **Social Sustainability**
5. **Commitment to Economic Growth**

[1] Joso de Pinheiro, EU-Commissioner for Development in his introduction to "Sustainable Transport" (EU sector paper of 1996).

A. The most important Results for Organising and Financing Road Maintenance in African Countries

1. Organisational Aspects

a) Surprisingly, the replacement value of road networks is 2 to 4 times higher in African developing countries than in industrialised countries - if compared to the respective Gross Domestic Product (GDP). The replacement value:

amounts to 30 - 60 % and, in some cases, even up to 125% of GDP in African countries,
and only to 15 - 25 % of GDP in European countries (18 % in Germany).

b) Because of its size alone, this huge asset value of road networks in developing countries must be considered a "**SPECIAL ASSET**". It should be handled **outside the State Budget** under the special goal of ASSET MANAGEMENT.

The approach of asset management for this precious infrastructure is being introduced in Europe only recently: it does exist neither in the Former socialist countries nor in third world countries, where indeed it might be needed most due to the deficiencies in the public accounting System. In some countries - such as former socialist countries like Tanzania or Ethiopia - en the use of depreciation figures for state property may be forbidden by law.

ASSET MANAGEMENT for roads basically follows the same principles as those familiar from the private house building sector, using fixed depreciation rates as well as fixed percentages of the invested value for securing the maintenance and for up-keeping the initial replacement value.

c) Asset management, in order to become effective and to be protected against undue political interference, requires in most cases a separate organisation outside the ministerial administration, a so-called **ROADS AUTHORITY**. This roads authority exercises all ownership rights over the roads: it controls access (especially with regard to heavy axle loads), receives user fees, organises road maintenance etc. It presents annually - like hitherto the separately organised Railway Authority - its actual property Status an assets and liabilities and is subject to control by independent auditors.

d) Along with the intention of decentralising road administrations at provincial and district level, responsibility with regard to ownership must he promoted at local level. This might be - in the same way as with private house owners - achieved by means of a **REGIONAL ROADS REGISTER** as well as a **REGIONAL ROADS REVENUE REGISTER**, which graphically displays the road map of the region as well as its maintenance conditions, the maintenance programme and the revenue sources.

2. Financial Aspects

a) On the financing side, effective asset management requires a **stable source of funding** of its own, i.e. road transport taxation as a levy for road use (comparable to railway ticketing and rent in the building sector). This stable source of sufficient funding for road maintenance does not yet exist in most African countries, although in some countries a formal road fund or road maintenance fund does exist, such as Sierra Leone, Ghana, Central African Republic and Chad.

b) The following are to be regarded as the **financial instruments for road maintenance:**

- The adoption of a general **road financing law** based on the principles of "**TRANSPORT finances TRANSPORT**" and aimed at levying cost-covering road use fees through fuel taxation, annual vehicle licence fees, axle and transit charges for trucks, road trolls etc.

- The establishment by law of a **Road Conservation Fund** to ensure targeting of specific expenditure for road maintenance and its allocation among the various road categories of national, rural and urban roads. Such road Funds "of the second generation" differ from the first generation of road funds, which were often misused for new road construction or even for financing expenditures outside the road sector; they already exist in one third of the African countries.

- Creation of an **annual road conservation budget** amounting to an average **of 2.5 % of the re-establishment** value of the existing road network of the African countries.

- Introduction of a **fuel levy**, at an average rate **of 10 US cents per litre** for diesel and petrol, to be applied as a charge an the normal fuel price for the exclusive maintenance of roads, this fuel levy being the main source for the Road Conservation Fund. The required level of fuel taxation for road maintenance is that of Value Added Tax (VAT), i.e. 20% of the average fuel selling price of 50 US cents per litre (= 10 US cents). The present very low level of fuel levies channelled into the Road Conservation Fund (for example, 0.7 US cents per litre fuel in Togo, 1.6 cents in Ghana and Zambia) is in most cases not adequate: a mere "Road Penny" does not solve the problem of financing road maintenance.

  African governments have to realise, that - after reaching fuel prices of at least the present average in world developing countries of nearly 50 US cents per litre - the "First Value Preservation Tax" an fuel (i.e. 20 % VAT on 50 cents = 10 cents) has to be reserved to the Road Authority for road maintenance and only after that, a second Value Added Tax of the same size may be allocated to the government's budget in the normal manner.

  However, the position in African countries shows that the actual sales prices for fuel vary between

  3 US cents per litre diesel (Nigeria, Nov. 1995)
  and 98 US cents per litre petrol (Uganda, Nov. 1995).

  By the way, 110 US cents is the average of the West European sales price.

  This demonstrates that within the African continent fuel prices vary by more than 30-fold and require an urgent co-ordination within the regional organisations such as UDEAC, ECOWAS etc. It is worth mentioning that the fuel bought on the world market including transport, but without fuel levy and special taxes, is about 25 US cents per litre.

- Placement of the Road Conservation Fund **under special ownership legislation within the Roads Authority**. Indeed, mainly due to widespread government ownership of the Fund, the Road Conservation Fund in most countries shows only minimal contributions, amounting often only to a mere 2% (such as in Togo or Ghana) of the selling price of the fuel, whereby all other fuel taxes are channelled into the general budget. Thus the question of ownership of the road conservation fund remains a key issue to be solved.

- Introduction of an **annual vehicle licence fee** of approximately 1% of the vehicle import value (but at least 75 US$ per passenger car per year) particularly for covering the infrastructure costs linked to the parked traffic in towns and cities and going therefore to the township. This represents on average no more than the value of one fuel tank's filling of 50 litres once in every 4 months.

  However, the reality in African countries shows that the annual vehicle licence fee ranges between

  0 US$ (Burkina Faso, Togo, Nov. 1995)
  and 205 US$ (Rwanda) for small passenger cars,

  while the corresponding fee for the same car amounts to 193 US$ per year in Central European countries such as Germany.

- Introduction of **taxes on Land development and real estate property** (as well as an the commercial turn-over in the Central Business District), which should be exclusively earmarked for roads and infrastructure investment in urban areas. Such taxes are still lacking in most African countries (and specifically in the cities for the financing of modern residential roads, which cannot be financed out of general funds. They may even include some provisions - in the range of 20 % - for the financing of roads in squatter areas of the towns).

- The financing of die **rural roads network** (or parts of it specifically in the areas of subsistence agriculture), whose construction and maintenance may often not be justified if compared to the revenues from the motorised traffic carried by them, may be secured by **cross-subsidisation** from the General Road Fund (allocating approximately 20% of the Road Fund revenues to rural roads). By this way the social aspects of road network development may be taken into account also; and the famous 20 % recommendations for the social share of expenditures - as laid down in the *Rio Charter* of 1994 - are to be put into practice.

B. Summary of Conditions in West African Countries

1. Political and Historical Background

It must be borne in mind that the difficulties in introducing policy reforms, as outlined above, differ in the various countries.

After political independence, the group of **French-speaking countries** (Senegal, Ivory Coast, Togo, Benin, Cameroon, CAR, Chad, Niger, Burkina, Mali) continued the hereditary French policy of high fuel taxation.

They even maintained or reintroduced this high fuel taxation after the devaluation of the Fcfa in January 1994, with the result that today most of them have fuel sales prices much higher than those of their neighbouring Anglophone countries.

Indeed, the **English-speaking countries** of West Africa (Ghana, Nigeria, Sierra Leone) followed after independence "social" transport and fuel-pricing policies, fulfilling the demand of consumers for low or even subsidised prices. Only after economic collapse, Ghana in 1984 and Sierra Leone in 1993 raised their fuel taxation levels, while Nigeria - because of its own fuel production and despite some efforts in recent years - still maintains what are by far the lowest fuel prices in sub-Saharan Africa. Based an a long history of distorted prices, it seems still to be impossible - as once a Nigerian minister put it - to convince the Nigerian public that fuel for the vehicles should not be cheaper than the soft drinks for the driver. Thus, due to the lack of a consistent transport taxation policy, there is in Nigeria almost no international co-operation in transport or road financing.

2. The Issue of Fuel Smuggling

It is difficult to control state borders if price levels for fuels differ considerably. Along most African borders it might he easy to smuggle fuel, with the result that for instance an the Nigerian border with neighbouring Benin only 2 jerry cans of fuel may yield a profit of 10 US$; with the neighbouring countries of Niger, Chad and Cameroon the profit may even reach 20 USS, which corresponds to more than half of a monthly local salary. It is estimated that approximately 15% of all fuel imports in Chad, 25% in Benin and 50°/o in Niger are imported by "special channels".

C. General Conclusions to be drawn from the Study

1. Subsidisation

There is no reason to treat the transport sector in Africa as a subsidised social sector any more, as it is exemplified through specific tax exemptions, direct and indirect subsidies for fuel and sometimes even for the purchase of pickups and trucks in oil-producing countries such as Nigeria, but also in former socialist countries like Ethiopia and Madagascar.

2. Taxes

On the contrary, there is strong evidence that the transport sector can and should be treated as a highly taxed economic sector. As the outstanding example of Uganda in East Africa has shown recently, the transport sector in Africa may not only bear the high world market prices for vehicles and spare parts, but can also support a quite high level of taxation an petrol and diesel (such as in Senegal, Ivory Coast, Central African Republic, Mali, countries which apply rates quite similar to the taxation level of Central European countries).

3. Fuel Prices

On a world-wide scale - and based an the success of the South-East Asian countries with their high fuel taxes (cf. annex 4) - it may be concluded that **fuel prices in the developing countries generally should he located in between the present average of 0.49 USS super-grade petrol pump price per litre in developing countries and the average of 0.98 USS per litre in the industrialised countries.**
One has to take account of the fact that in special cases like Nigeria (with a population of nearly 90 millions), the national road taxation policy constitutes a major obstacle to regional economic integration.

For further information about fuel prices please download the 'INTERNATIONAL FUEL PRICES BOOK – 3rd Edition 2003' at:

www.internationalfuelprices.com
www.zietlow.com

International Fuel Prices

- May 2003 -

3rd Edition, 114 Pages
(available now in 7 Languages: English, French, Spanish, German, Russian, Arabic and Chinese)

Contents:
- **Diesel Prices of 165 countries**
- **Gasoline Prices of 165 countries**
- **Time Series of Price Development**
- **Fuel Taxation for State Financing**
- **Fuel Subsidies**
- **Fuel Prices and Purchasing Power**
- **Contraband of Fuel Worldwide**
- **Government Tax Calculation**

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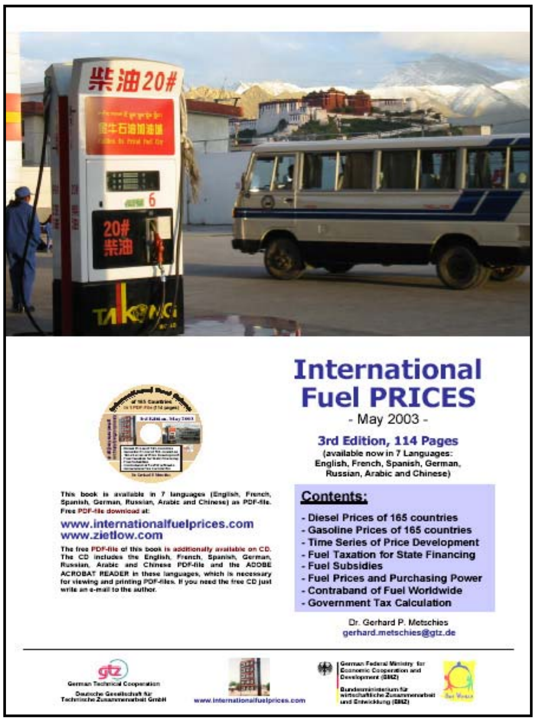
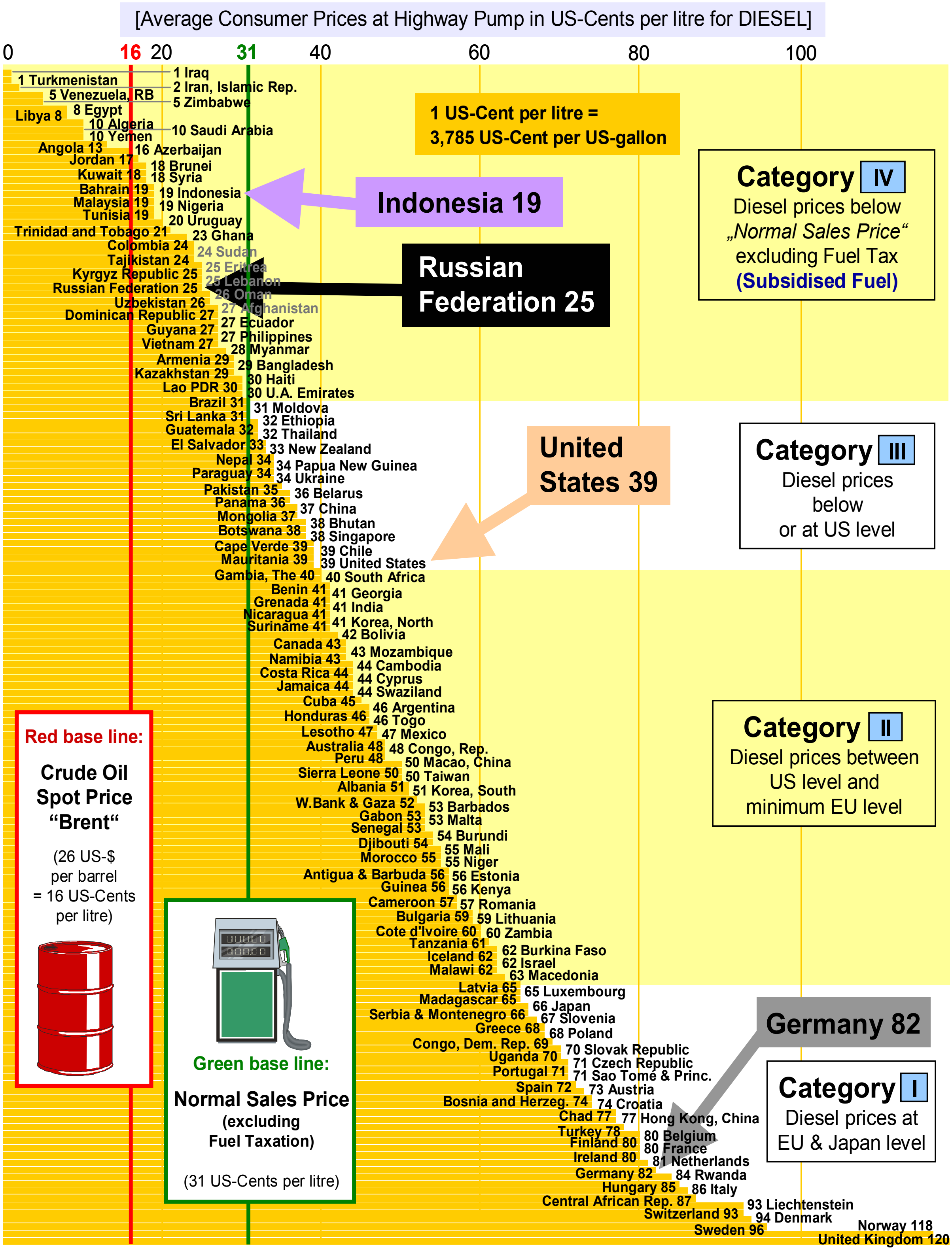


Extraction of ‘INTERNATIONAL FUEL PRICES 2003’:

Diesel Prices in 165 Countries
as of 10 December 2002



Note: The “**Red Base Line**” represents the world market price for crude oil (North Sea Brent) at Rotterdam port on 10th December 2002. This price was by chance roughly the average crude oil price during the year 2002.

The “**Green Base Line**” represents the hypothetical sales price for refined and distributed PETROLEUM FUEL, if it were sold as a normal commercial commodity e.g. MINERAL WATER. Therefore the green line marks the border between fuel subsidy & taxation. This green line also applies to **oil producing countries**: assuming that the oil production could have been sold abroad, fuel prices are effectively subsidised at the expense of the country’s energy sector.

[Source: Metschies, gtz survey Dec. 2002 / Dec. 2003]

update: 09.Dec.2003

4. Social Sustainability

Contrary to popular belief - but proven in cases like Uganda - **price increases an fuel are socially sustainable**, as fuel constitutes only a minor share of the overall transport price (for instance, in Egypt less than 5% of the fare for overland busses), if compared to vehicle depreciation, repairs, spare parts, tyres, insurance and organisational costs.

In the case of small private passenger cars (example of used cars in an average African country like Togo), a first step in the fuel price increase of 20% an the existing price per litre (i.e., of 10 US cents per litre, which is sufficient for road maintenance) would increase the annual running costs of the Small car by only 11%.

Furthermore, this price increase would affect only the upper class of society; for example only 0.5% of the population in Togo and 0.1 % in Ethiopia have a small passenger car of their own. Thus the issue of financing road maintenance becomes a question of political will and implementation of taxation laws by the ruling bodies and institutions.

5. Commitment to Economic Growth

This study showed that the **Asset Value** of the road network is one of the major items of the "**Wealth of the Nation**", especially for the developing countries in Africa. But at the same time the road sector is part of a general scenario of an "**Economy of Waste**": the existing assets are not maintained and the investments in the transport sector - if any - are made in the wrong place.

On the other hand - due to their continuously growing population - African countries desperately need economic growth: And **the road and transport sector may contribute to this economic growth, if it is handled properly:** Not only by the self-financing taxation of the sector but also by the right choice of projects which are economically profitable for the country.

Experience has shown that this "**Profitability of Road Projects**" (or the economic growth of the invested capital) as a rule of thumb may he defined as follows:

Type of Road Project	Internal Rate of Return (IRR) of the invested capital
Construction of a new road	approx. **10 %**
Rehabilitation of an existing road	approx. **20 %**
Maintenance of existing roads	approx. **40 %**

This clearly shows that a variety of maintenance projects - instead of an isolated new road construction project - contributes much more to the economic growth of the country. As the World Bank and other international banks require a minimum IRR of 12 % for road projects, the table also explains why it is so difficult to find financing bodies for new road construction projects today and why investments for road maintenance are best suited for an economy of growth.

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The complete book 'FINANCING ROAD MAINTENANCE IN WEST AFRICA' consists of 272 pages (A5) and is up to now (August 2004) only available in a printed version and not as a PDF file.

The printed version of the book is available at:

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