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**ROAD MAINTENANCE MANAGEMENT AND FINANCING REFORMS IN
TANZANIA: EXPERIENCE OF THE ROAD FUND**

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ROAD MAINTENANCE MANAGEMENT AND FINANCING REFORMS IN TANZANIA: EXPERIENCE OF THE ROADS FUND BOARD

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Abstract

Tanzania has a total road network of approximately 85,000 km (including feeder, district and urban roads) of which about 5% is paved. Up until 1970's the economy of the country performed well with both agriculture (3.3% p.a) and industry growing at moderate rates. Road Maintenance was well managed and resources were adequate. In 1968 for instance, funds were allocated for road maintenance at the rate of US\$ 800 per km for bitumen roads. For Engineered gravel and earth roads, the allocations were US\$ 400 per km and US\$ 230 per km respectively. By early 1980's the gap between public expenditure and aggregate supply widened, the current account deficit was about 15% of GDP, inflation was about 30% and the exchange rate was substantially overvalued.

With these difficulties, the level of public expenditure allocated for maintenance declined such that by 1990, only about 15% trunk and 10% of the rural roads respectively were in good condition. Since 1998 the Tanzanian Road Sector has been undergoing far-reaching reforms whereby the Parliament enacted the Amendment for the purposes of making better provisions of the Act to establish a Roads Fund and the Government under the Executive Agencies Act, 1997 established an Executive Agency (TANROADS), with the responsibility of management of the roads and ferries in Mainland Tanzania.

The relevant particular of the Tanzanian experience is that the Road Fund Board also acts in the capacity as a Ministerial Advisory Board as provided for under the Executive Act, 1997. The Tanzanian experience has demonstrated that the above institutional arrangement did enhance TANROADS performance although it is slightly different from the two-board option as suggested by the SADC Model.

The main in-built reform elements were as follows:

- *Restructuring road administration so as to have clear assignment of responsibilities between various Ministries with road portfolio.*
- *Involving the private sector in the execution of road works especially road maintenance.*
- *Involving the road users in financing of road maintenance. Traditionally this has been the responsibility of the Government.*
- *Commercialisation of supply of road-works plant and equipment.*
- *Ringfencing of the fund for maintenance.*

Experience so far gained indicate that the envisaged reforms will help alleviate to a great extent the institutional problems of inadequate funding for road maintenance; cumbersome administrative and procurement procedures; unmotivated staff etc;. This

paper also highlights operational constraints, recommendations/lessons and challenges for the future.

INTRODUCTION

Tanzanian Setting

1. Tanzania is situated between latitudes 1°- 12° South and longitudes 29°- 41° West. It is bordered by the Ocean Indian in the East, by Kenya, Uganda and Lake Victoria in the North, by Rwanda, Burundi, the Democratic Republic of Congo and Lake Tanganyika in the West and by Zambia, Malawi, Mozambique and Lake Malawi in the South. It has a total land area of 942,784 km² and 61,495 km² of surface water. The highest peak is the Mount Kilimanjaro (5895m above sea level).

For administrative purposes Tanzania Mainland is subdivided into twenty one regions and Dar es Salaam is the country's capital. Tanzania Mainland has a total population of 31.3 million of people (in 1999) and an average growth rate of 2.8% per annum. Zanzibar has a population of around 875,000.

2. Agriculture is the backbone of the economy contributing 50% of GDP. Tanzania has also substantial mineral deposits which contribute significantly to the national economy. Production in 2000 of minerals included Diamond (354,388 carats), Gold (15,060 kg); Phosphate (5,100 tonnes); Coal (79,184 tonnes) and Pozzolana (57,134 tonnes). Currently the contribution of the mining sector to the GDP is quite small (2.1% in 1999). However mining is a sector which is expected to grow rapidly in the future and whose contribution is projected to 10% of GDP in the near future.

Tanzania tourism has high growth and is a major source of foreign exchange earning. It has some of the best parks and game reserves in Africa, at Ngorogoro, Serengeti, Selous and Mount Kilimanjaro with tourists from the whole world. Tourism is growing fast. In 1998, 482,000 overseas tourists visited Tanzania boosting foreign exchange earnings from US\$ 392 million to US\$ 570 million.

The Road Network

3. Tanzania has a total road network of 85,000 km in Mainland and 1,150 km in Zanzibar. The Highways Order (Notice 165 of March 5, 1967) categorised four road levels: Trunk roads, Regional roads, District roads and Feeder roads. The first two categories form the Classified Network, which is made up of 10,300 km Trunk roads and 24,700 km of regional roads.

In Tanzania mainland, the Trunk roads network comprises nine international corridors (8,275 km) and branch sections (2,025 km). Paved roads account for 36% of Trunk roads and 2% of Regional roads. On the other hand roads in bad and poor conditions in 2000 represent 61% of Trunk roads and 75% of regional roads.

From transportation standpoint the Trunk Road Network is made up of nine corridors, namely the Central Corridor, the Tanzam Highway, the Southern Corridor, the Western Corridor, The Mid West Corridor, the Great North Corridor, the Lake Circuit, the North Eastern Corridor and the South Coastal Corridor. These corridors are international route linking Tanzania to its neighbouring countries.

4. The Classified Network is under the authority of the Ministry of Works (MOW) whereas non-classified roads are under the authority of the President's Office for Regional Administration and Local Government (PORALG).

Information on the Classified Network has been captured under several transport studies. Data were extracted from these sources on structural features and pavement conditions of the Trunk Road Network, analysed and stored into a database in the uniform HDM-4 data format for the preparation of the Ten-Year Road Sector Development Programme (10Yr RSDP).

On the other hand information on the network of unclassified roads, i.e. district, urban and feeder roads is scarce making analysis difficult.

5. Transport adequate infrastructures, essentially roads, will be a pre-requisite to attain the development objectives set out for all economic sectors, particularly agriculture, mining and tourism sectors.

The entire trunk roads network has an average AADT (Average Annual Daily Traffic) of 342 vpd (vehicles per day) with AADT on corridors ranging between a high of 929 vpd on Tanzam Highway to a low 78 vpd on the Mid West Corridor. The two corridors with the largest traffic volume are the Tanzam Highway and the North-Eastern Corridor with AADT of 929 vpd and 863 vpd respectively. Together these account for 57% of total traffic on all of Mainland Tanzania corridors.

6. Road transport handled 70% of the internal freight traffic and contributed 5% of the GDP in 1999. Total annual traffic volume was estimated at 24,320 million veh.km. Fuel consumption for road transport was projected at 577,100 metric tons for FY2000/01 and 668,065 metric tons for FY2003/04 assuming an average growth rate of 5% per year.

THE ROAD SECTOR REFORMS

Reform Policies

7. Since 1998 the Tanzanian Road Sector has been undergoing far-reaching reforms in both public and private sectors based on the basic principles laid down in the SADC Model Legislative Provisions (MPL). The two major reforms are highlighted below:

- Parliament enacted the Amendment no.11 of 1998 date 23rd December, 1998 to the Roads Tolls Act of 1985 for the purposes of making better provisions of the Act to establish a Fund into which shall be paid all monies collected as roads tolls imposed on diesel and petrol, transit fees, heavy vehicle licences, vehicle overloading fees, or from any other source at the rate or rates to be determined by Parliament from time to time;
 - Government through the Order no.30 Of 1997 dated 5th June, 2000 under the Executive Agencies Act, 1997 established an Executive Agency to be known as the Tanzania National Roads Agency (TANROADS), which shall, with respect to the day-to-day management of the roads and ferries in Mainland Tanzania.
8. The road sector reforms in Tanzania are modelled along the lines of the four building blocks as discussed by the RMI (Heggie 1998).
- Management – establishment of TANROADS to operate as a business like road agency;
 - Financing -- establishment of a Road Fund (RF) by introducing an explicit road tariff to manage demand and generate the revenue necessary to support the operations and maintenance of roads;
 - Responsibility – a consistent organisational structure for managing different parts of the road networks – the MOW can be viewed as the Client, while the RF board as a Purchaser and TANROADS as Services Provider for trunk and regional roads and PORALG as Services Provider for district, urban and feeder roads.
 - Ownership – involvement of private sector in the management of roads through representation on the boards of RF and TANROADS;
9. The implementation of the road sector reforms in Tanzania is based on the following basic principles highlighted hereafter:

Road Fund

- To establish an arms-length agency responsible for road financing (the Road Fund) that has legal status and authority. The Road Fund is overseen by a majority private sector board (five out of nine) and managed a day-to-day basis by a full time manager in the person of a Fund Manager, who is appointed by and answers to the Board which is chaired by a non-executive chairperson.

The Fund enjoys complete autonomy as a commercial body. As part of its function, the Fund: (a) channels all revenues destined to roads; (b) disburses funds to road authorities; and (c) audits compliance by road authorities with financing conditions.

- To introduce a framework for good governance that (a) democratises decision-making by involving all stakeholders (public and private); (b)

ensures stable funding flow; (c) create effective road maintenance and financial frameworks; and enhances the delivery of road services.

- To clearly identify revenue sources, with road user charges as the primary source of revenue (others included parliament appropriations, donor funds, fuel levies, fines).

Revenues derived from separate sources unit must be managed in separate accounts; and, clear and transparent procedures are followed in introducing or adjusting road user charges. Detailed criteria determine the level of a charge.

- To develop procedures for equitable disbursements of funds to road authorities.

10. Road Agency

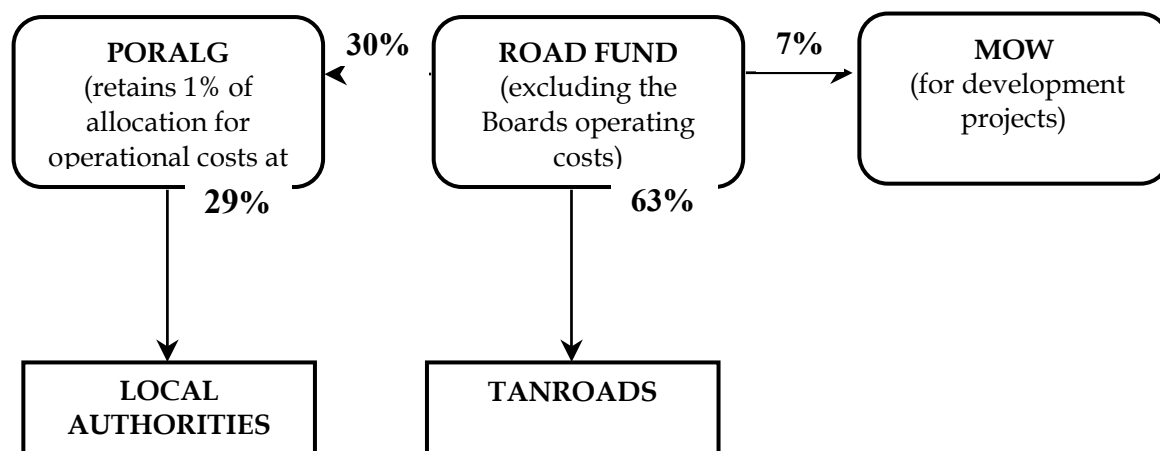
- To establish a Road Agency (TANROADS) as an arms-length service delivery body. It enjoys the same legal status as the Road Fund and enjoys the same basic commercial freedoms. The Road Agency is also overseen by a majority private sector Board and managed on a day-to-day basis by a full time manager in the person of a Chief Executive.
- The Agency is the planning agent in the development of the road network and acts as service provider of road infrastructures. The Agency may also act as contractor with other (private) service providers or as concessionaire for a private service provider.
- To introduce a clear performance measurement based on integrated multi-year planning framework. This moves TANROADS away from traditional civil service management procedures and introduces appropriate commercial planning practices.

11. The Ministerial Advisory Board of TANROADS

The relevant particular of the Tanzanian experience is that the Road Fund Board also acts in the capacity as a Ministerial Advisory Board as provided for under the Executive Act, 1997. The Tanzanian experience has demonstrated that the above institutional arrangement did enhance TANROADS performance although it is slightly different from the two-board option as suggested by the SADC Model. It is further noted that such arrangement suits appropriately to developing countries where there are limited managerial resources for the formation of two boards with different members at the same time.

Disbursement Formula

12. The Road Fund disbursement criteria effective since financial year 2000/2001 are as follows:



After deducting Road Fund Board expenditure, 30% of the remaining balance is disbursed to PORALG for district, urban and feeder roads and 7% (of the remaining 70%) is disbursed to the MOW to finance Government contribution to development projects funded by donors. The remaining 63% is disbursed to TANROADS for the trunk and regional roads network.

ACHIEVEMENTS

Increased Road Maintenance Funds

13. Tables 1 and 2 show the Road Fund revenue collections since it was established in 1991.

Table 1: Road Fund collections

| YEAR | COLLECTIONS IN TSHS (000) | COLLECTIONS IN US\$ (000) |
|-----------|---------------------------|---------------------------|
| 1991/1992 | 3,741,908. | 12,268.5 |
| 1992/1993 | 6,840,823 | 17,102.0 |
| 1993/1994 | 14,272,218 | 29,246.0 |
| 1994/1995 | 21,198,529 | 39,512.6 |
| 1995/1996 | 28,307,547 | 49,969.0 |
| 1996/1997 | 25,398,763 | 42,651.0 |
| 1997/1998 | 33,745,300 | 53,142.0 |
| 1998/1999 | 38,365,496 | 55,763.0 |
| 1999/2000 | 39,391,700 | 51,967.9 |
| 2000/2001 | 47,252,076 | 55,590.7 |
| 2001/2002 | 52,796,607 | 58,662.9 |

Table 1 indicates that Road Fund revenue has (in nominal terms) increased by 1300% over the last ten years. There was a remarkable average annual increase of collections from 3% a year before the Board was established to 20% after establishment of the Board and ring fencing of the funds.

Meeting Maintenance Budget Requirements

14. Table 2: Maintenance Budgets Status

| Financial Year | MOW/TANROADS | | | PMO/PORALG | | |
|----------------|--------------------|-------------------|-----------------|--------------------|----------------------|-----------------|
| | Budget TSh million | Actual (TSh.mil.) | % Actual/Budget | Budget TSh million | Actual (TSh.million) | % Actual/Budget |
| 1997/1998 | 19.971 | 11 419 | 57% | | | |
| 1998/1999 | 27 560 | 24 609 | 89% | | | |
| 1999/2000 | 25 500 | 21 985 | 86% | 13 897 | 10 468 | 75% |
| 2000/2001 | 25 765 | 25 632 | 99.5% | 14 160 | *10 847 | 77% |
| 2001/2002 | 31 390 | 31 390 | 100% | 15 239 | 15 239 | 100% |

Note: * The last disbursement for PORALG in FY2000/2001 was received in June 2001 but disbursed in July 2001 because of delays in getting fund allocations to Councils from PROALG headquarters.

Table 2 clearly shows that since the establishment of the Road Fund Board, allocations for maintenance have increased and budget financing has significantly been improved.

15. Other achievements

- Follow up with the Ministry of Finance on unmerited funds of the FY 1999/2000. A total of Tsh 2,866.8 million fuel levy collected have been recovered by June 2000.
- Organisation of two stakeholders meetings in May 2000 and August 2001. The first meeting raised awareness on the role of roads in economic and social development of the nation and revived the concern about the losses attributed to roads in bad condition. The second meeting was meant to solicit views from road users on the widening of the road fund revenue base.
- Establishment of procedures and systems for managing the fund. Streamlining of procedures for collection and disbursement of funds including opening of Road Fund disbursement and administration accounts with a commercial bank.
- Recruitment of a consultant to carry out a study to review the criteria for allocation of funds to Local Authorities with a view of improving the disbursement formula with more consistent and relevant parameters.
- Launching of the Road User Magazine as a forum for exchanging views with stakeholders.
- Improvement of Performance Agreements with implementing agencies by incorporating several new clauses and performance indicators which can be verified with simple measurements.

- Completion of the Financial and Technical Audits of implementing agencies' performance for FY 2000/2001 and FY 2001/2002.
- Completion of a study on widening the Road Fund revenue base for sustainable road financing.

CHALLENGES AND THE WAY FORWARD

The Ten-Year Road Sector Development Programme

16. The Ten-Year Road Sector Development Programme (10Yr RSDP) is geared on the one hand to contribute to the achievement of the economic and social objectives set out by the Government at different time horizons, and on the other hand, to realise specific targets assigned to the road sector. The scenarios have been drawn separately for mainland Tanzania and Zanzibar, taking account varying features of their respective economic structure and potential.
17. For Tanzania mainland three scenarios have been worked out depicting three economic growth alternatives for the analysis period 2001-2010 as follows:

| Scenarios | GDP Growth Rate | GDP Per capita Growth rate * | Transport Demand Elasticity | Traffic Growth Rates |
|--------------------|-----------------|------------------------------|-----------------------------|----------------------|
| Realistic Growth | 5.50% | 2.7% | 1.0 | 5.50% |
| Development Growth | 7.00% | 4.2% | 1.0 | 7.00% |
| Pessimistic Growth | 3.25% | 0.5% | 1.0 | 3.25% |

Note: * Population growth rate assumed at 2.8% per year

With respect to Zanzibar's macroeconomic indicators, one scenario was worked out with an assumed GDP growth rate of 4% per year throughout the analysis period 2001-2010. This would result in traffic growth rate of 4% per year with elasticity in transport demand of 1.0.

18. The total cost of the 10Yr RSDP including Tanzania mainland and Zanzibar varies widely depending on programme alternatives.

After analysing the alternatives, it is recommended to implement the Desirable Programme D-1 which pursues the development and maintenance of a Desirable network capable to provide the indispensable support to the macroeconomic objective set out by the Government for the period 2001-2010. The cost of this programme amounts to US\$ 3,130 million of which US\$ 1,376 million would come from Government funding and US\$ 1,754 million from donor contributions.

The challenge is how to close the financial gap between GOT allocation to the road sector and GOT funding requirements which is US\$ 455.7 million. There are proposals already being analysed particularly on the current revenue bases.

The Challenges to the Road Fund Board

19. Against the above series of proposals which focus on the revenue side, the challenges to the Road Fund Board are on the expenditure side consisting of improving the effectiveness and efficiency in the allocation and disbursement of the scarce resources, which will be made available to the Road Fund Board for the implementation of the 10Yr RSDP.

In this regard it should be emphasised that this objective can only be achieved through strong corrective measures to ensure financial and technical discipline in managing scarce available funds. Experience suggests that these measures should focus on three critical areas/functions, that is:

- financing;
 - planning and monitoring; and
 - works execution.
20. Along the line of the above framework the Road Fund Board has already taken some of the corrective measures that were identified in the Financial Audit Report as well as in the Technical Audit Report on the management of funds in FY2000/2001.
21. Finally in more general terms and along the line of the above proposed measures, the cost efficiency and effectiveness of the road sector has to be improved through:
- Development of the capacity of road construction industry including consultants, contractors, suppliers of goods and plant/equipment to improve effectiveness and efficiency in works execution;
 - Implementation of mandatory Quality Assurance Plans by all parties involved in contract execution to ensure value for money;
 - Streamlining of procedures for procurement of works, services and goods by implementing agencies to speed up the process of contract award;
 - Preparation and programming of maintenance works on the basis of accurate information of road network by implementing agencies to improve the accuracy of cost estimates;
 - Improvement of road design on the basis of in-depth knowledge of local construction materials by implementing agencies to reduce construction costs;
 - Monitoring strict compliance with the provisions of Performance Agreements signed between implementing agencies and the Road Fund Board to ensure that performance targets are achieved as specified.

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