



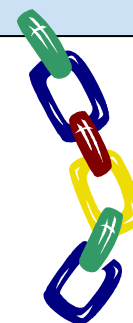
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Institutional Development for a Sustainable Road Sector Strategy

Findings from a Study of 4 SSATP Countries

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Africa Region



The World Bank



Institutional Development for a Sustainable Road Sector Strategy

Findings from a Study of 4 SSATP Countries

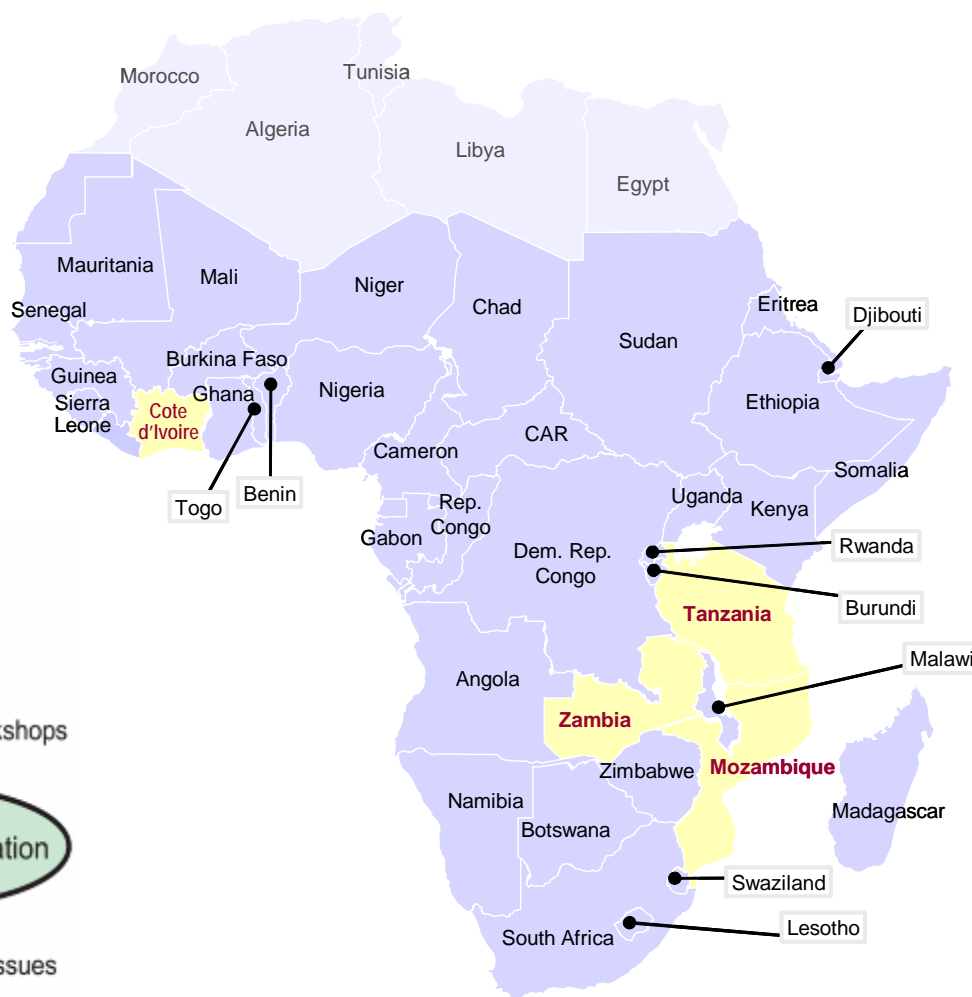
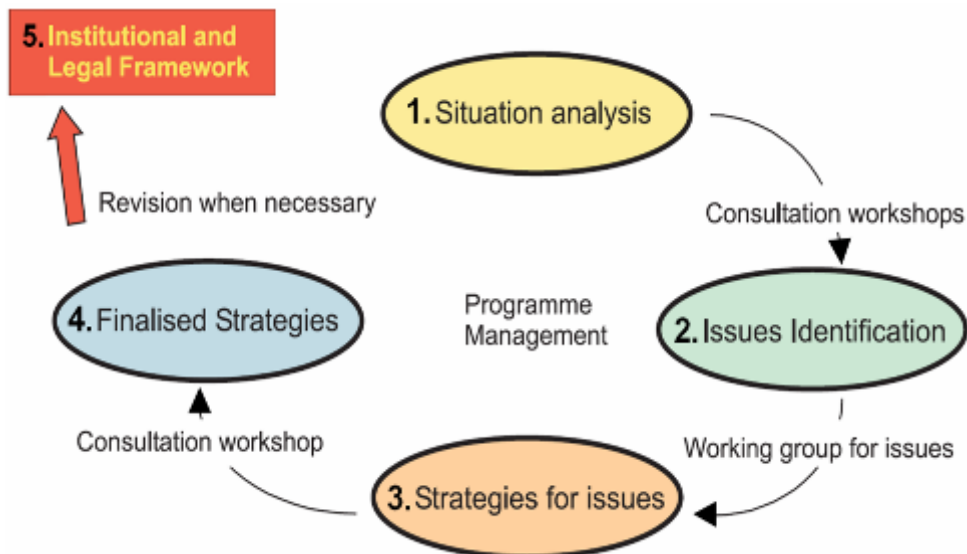
1. Study Objectives

- ◆ **Review of the Institutional Framework**
under which road funds and road agencies operate in SSA
- ◆ **Assessing of Changes in the Road Institutions**
and their impact on improving road maintenance
- ◆ **Providing of Guidelines for Road Institutions**
(lessons learned, best practices, recommendations)

2. Study Investigation Area

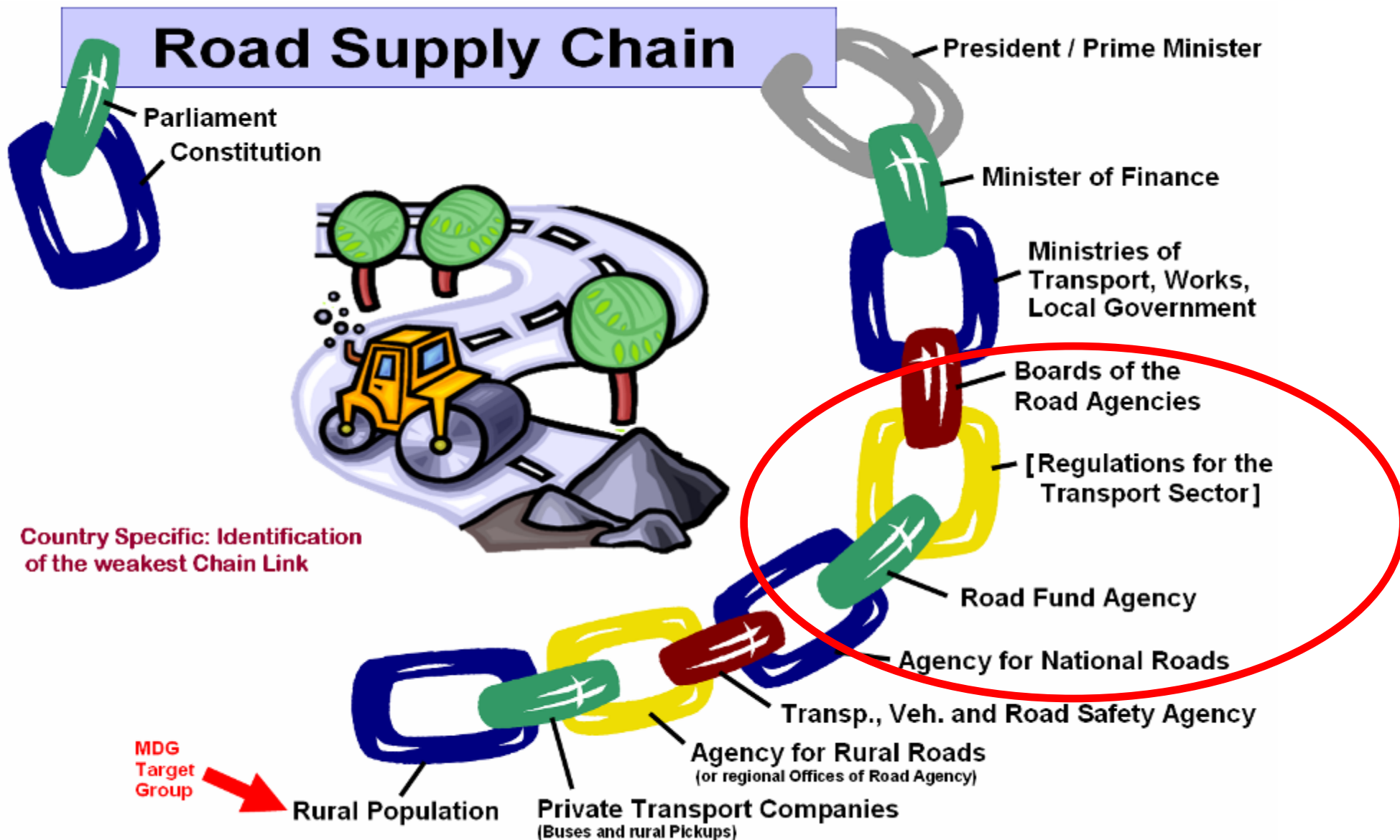
- ◆ **Cote d'Ivoire, Mozambique, Tanzania, Zambia**

3. Study Execution Approach





4. General Overview on the Roads Institutional Issue

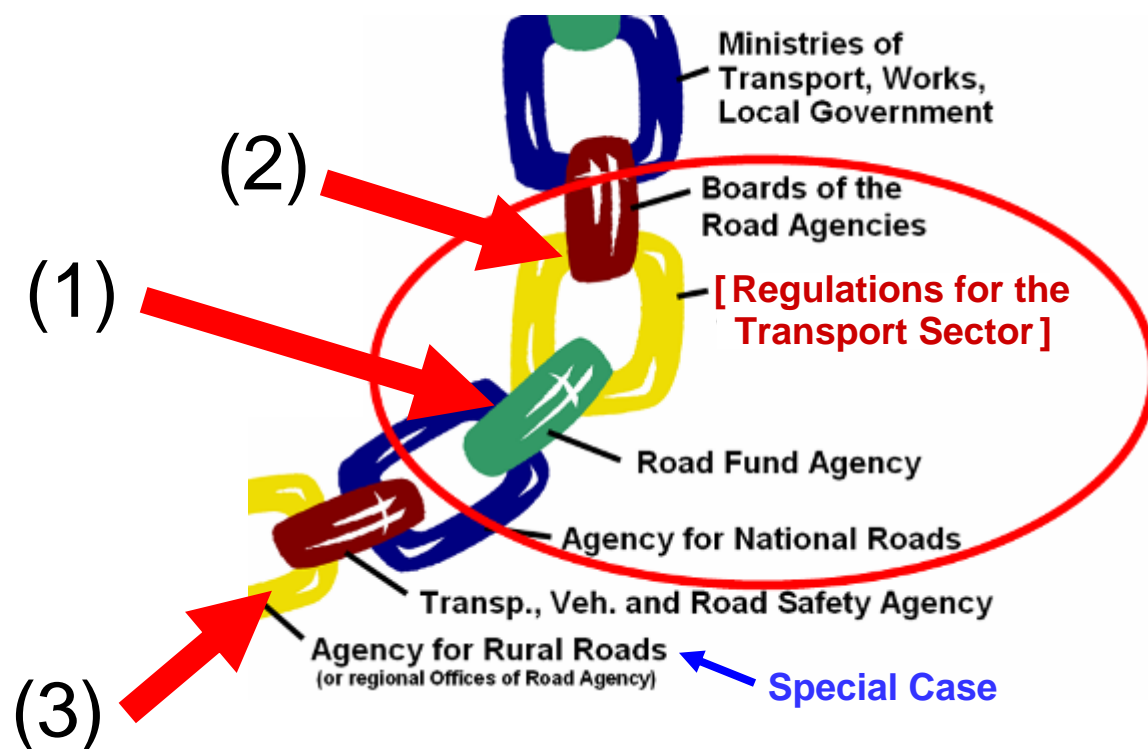


Note: The yellow chain link (Agency for Rural Roads) has been identified to the most problematic one in the institutional reform process.



Three Crucial Parts of were identified during the review on Road Institutions and their Institutional Links:

- ♦ (1) Internal Performance of Agencies for National Roads and Road Funds
- ♦ (2) External Institution Links to the Board and the Minister (1st golden Chain Link)
- ♦ (3) Special Case of Rural Roads (2nd golden Chain Link)



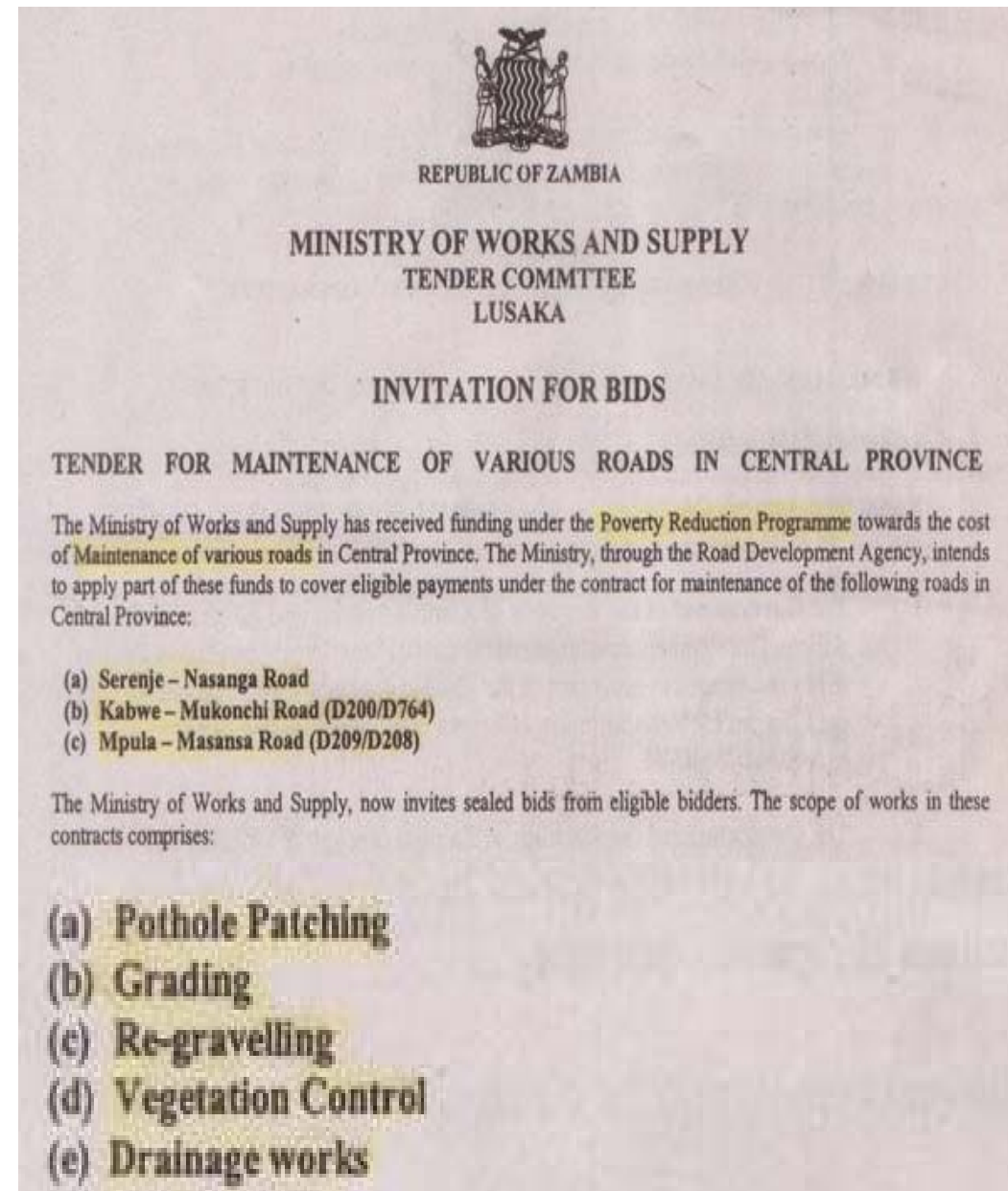


(1) Finding No. 1

Road Institution Reforms are welcome and Road Maintenance by Contract is General Practice

As for the execution of road maintenance (whose improvement is the primary goal the reorganisation process the road institutions) it has been found that the transition to contract maintenance (contrary to the former government owned force account work) has been successfully implemented in

- ◆ **AGERROUTE (Cote d'Ivoire)**
- ◆ **National Road Administration ANE (Mozambique)**
- ◆ **TANROADS (Tanzania)**
- ◆ **Road Development Agency (Zambia)**





(1) Finding No. 2



Institutional Reforms advance at very different Speed Levels

(not only between different countries but also within one country)

- ◆ **Mozambique:**
 - ANE** (National Roads Administration)
- ◆ **Tanzania:**
 - TANROADS** (Tanzania National Roads Agency)
 - PORALG** (Prime Ministers Office for Regional Administration and Local Government)
- ◆ **Zambia:**
 - NRFA** (National Road Fund Agency)
 - RDA** (Road Development Agency)
 - RTSA** (Road Transport and Safety Agency)
- ◆ **Cote d'Ivoire:**
 - AGERROUTE** (Road Agency)
 - Fonds Routier** (Road Fund)

- The newly formed institutions (mostly Road Funds) may adapt new procedures more easily than the traditional existing institutions (mostly of the Road Agencies).
- Rural Road Agencies seem to be the most problematic road institutions in all 4 countries.
- Best organisational Performance was found with the Road Fund in Zambia and the Road Agency in Tanzania



Annual Report of the Road Fund in Zambia:

(1) Finding No. 3

Annual Reports of Road Agencies differ considerably

Due to commercialisation road organisations differ by their basic reporting requirements. In the former ministerial structure no annual reports were required and even some newly restructured organisations lack this basic controlling instrument.

Road Institution (e.g. Zambia)		Personnel (e.g. Zambia)	Main Tasks	Key Benchmark Figures	Reporting Requirements
Road Fund		11	Revenue Acquisition and Donor Management	US \$ received from Fuel Levy, Vehicle Licenses; Requirements for Road Maintenance	Revenues Report
National Road Agency	Old Structure	1.072	Administration of National Roads	km of Roads in technically good Condition	Expenditures Report
	New Structure	278	Road Maintenance and Road Asset Management*	<i>Road Asset Value maintained or increased (?)</i>	Balance Sheet of Road Assets (?)*
Rural Roads Organisation		NA	Road Access to Rural Markets	Number and Quantity of Rural Markets which are reachable at all Wheather	Report on Access to Rural Markets
Transportation and Safety Agency		137 (87 new)	Vehicle and Driver Licensing, Technical Inspection and Safety	Number and Kind of regitered, licenced and inspected Vehicles; Number of Accidents	Revenues Report on Vehicle Taxation



Finding No. 4

Weak Point of the Reporting System - LOSS of ASSET CAPITAL

Why ASSET MANAGEMENT is needed, if well-timed maintenance is missing, e.g. for asphalt roads:

Road Maintenance Type	Requirement	Annual Costs
Routine Maintenance (Pothole Pitching)	permanent and yearly	c. 2.000 - 5.000 US \$ per km
Periodic Maintenance (Wearing Course Renewal)	every 8 - 10 years	c. 50.000 - 90.000 US \$ per km
Rehabilitation (Wearing Course Renewal + Base Course Renewal + Drainage)	<i>only if</i> Periodic Maintenance was not done in Time	c.150.000 – 250.000 US \$ per km

Time for Periodic Maintenance *has come*:



Gitarama / Rwanda

Time for Periodic Maintenance *has passed*:



National Road at border Zambia - Malawi

Main Conclusion: REHABILITATION indicates the loss of asset capital (due to the neglected well-timed maintenance). Final Success (and deficiencies) of the Road Reform can be verified only in the field.



Finding No. 5

Target and Focus for Reform has to be improved

- ◆ **The road sector is the last transport sub-sector which is undergoing an institutional reform**
(compared with all the other neighbouring transport infrastructure institutions like railways, airports, airlines, ports, ...)
- ◆ **The institutional change in the road sector is urgent and inevitable**
(in view of the billions of \$ road are the biggest investment of the whole infrastructure sector)
- ◆ **Transition from State Administration to private Company Management is possible in different Stages**

Commercialisation of Infrastructure at the Institutional Level

- From State Ownership to Private Ownership -

Transport Sector	Ministerial Administration	Parastatal Service	Commercial Enterprise	
Airline	less common	common	common	common
Airport	less common	common	common	less common
Ports	less common	common	less common	common
Railways	less common	common	less common	common
Bus	less common	less common	common	common
Roads	common	common	less common	less common
Ownership	100% state owned	100% state owned	Limited (LTD) (state majority)	Share Company (state minority)
Balance Sheet	not required	limited to Service Organisations	incl. Road Asset	incl. Road Asset



Taxation	Tax free	no VAT	VAT	VAT
Staff Salaries	State	State or Privat Sector	Private Sector	Private Sector

(Difference in taxation and staff salary level verified in the 4 countries study)



Finding No. 6

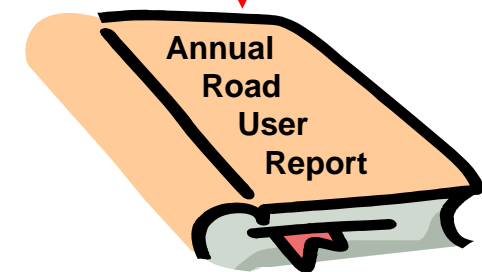
Missing Data Base for Commercialisation of Road Sector

- ◆ The Revenue base of the Road Agencies (**number of registered vehicles** and motor fuel used for transport) are to be permanently monitored
- ◆ The **capital value of the road network** and its development has to be closely watched and its financial maintenance requirements adjusted accordingly
- ◆ The **mapped roads** network of the country and its traffic load (as vehicles per day) as well as the condition of the roads require permanent monitoring
- ◆ **Prices of Transportation and Roads** must be monitored (passenger and goods transport on different categories of roads, incl. time series of prices)
- ◆ **Data on rural markets** and its all-weather access incl. transport times and rural vehicles are to be assessed
- ◆ **Annual publication** of a county-wide reports with comprehensive economic and social transport data covering **Road Provision and Road Usage**

Up to now a data monitoring of the sector is missing, although in some countries a real transport explosion takes place.



needed:



(report by the Regulator)



Finding No. 7

‘Regulation’ for Road Transport Market Strategy is missing

Options for Regulator Institutions:

◆ **Existing Ministries and Boards**

Critical voices concerning the regulation of the road transport market (guidance and vision) have been heard in all 4 countries:

- ‘rather burden than asset’ (Tanzania)
- ‘maybe useless’ (Mozambique)
- ‘overpaid and overstaffed’ (Zambia)
- ‘without influence’ (Cote d’Ivoire)

◆ **New Regulation Board**

Special Regulation Boards exist in different infrastructure sectors of SSATP Countries, like in Zambia the **Energy** Regulation Board and the **Water** and Sewage Regulation Council.

Experience with **NWASCO** Water Regulation may serve as a role model for road transport also (www.zambia-water.org.zm/nwasco/reform.pdf).

◆ **Existing Road Fund**

The outstanding performance of the **Zambian National Road Fund Agency NRFA** must be seen as a result of his role as leading force in the road sector (initiating reviews of ROADSIP II, Provision of an Institutional Reform Coordinator, ...).



Infrastructure Regulation e.g. in Zambia

Energy	Transport (Roads)	Water
	?	



Discussion Point: The Role of Road Funds as Regulators in the Road and Transport Sector



Finding No. 8 - Reforms in Infrastructure Sectors proved to be successful




Keys to Success:

Regulation, Commercialisation, Pre-Paid Financing

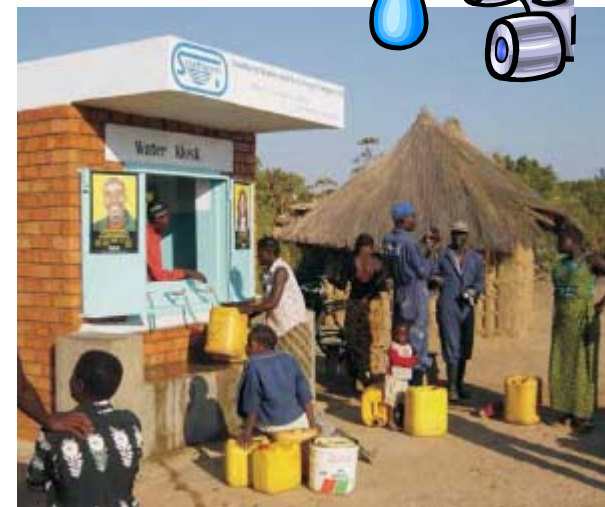
The **Cell Phone** Sector and the **Water Supply** Sector indicate that reforms and success in infrastructure service provision are possible, if they are managed by private organisations (**supervised by the Regulator**).

Road service provision may follow this model example also. The Road Fund (mostly financed with fuel taxes) may assume this regulatory role as he is best suited for this task already supervising the crucial part sufficient revenues.

Infrastructure Regulation e.g. in Zambia

Energy	Transport (Roads)	Water
		

Filling Stations achieving pre-paid financing of infrastructure sub-sectors

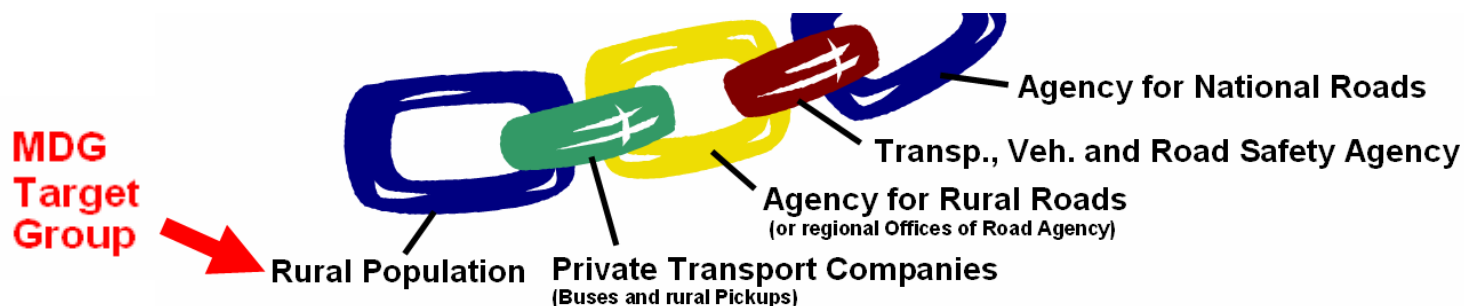




Finding No. 9 – Rural Roads – Stepchild in Road Organisations

Unsolved Rural Road issues have been found during the study at:

- **PORALG** (Tanzania)
- **ANE** (Mozambique)
- **RDA** (Zambia)



◆ Rural Roads have to provide access to the **traditional sector of the economy**. In SSA the majority of the population still live in the subsistence economy and form the target group of the MDGs (see FAO Map).

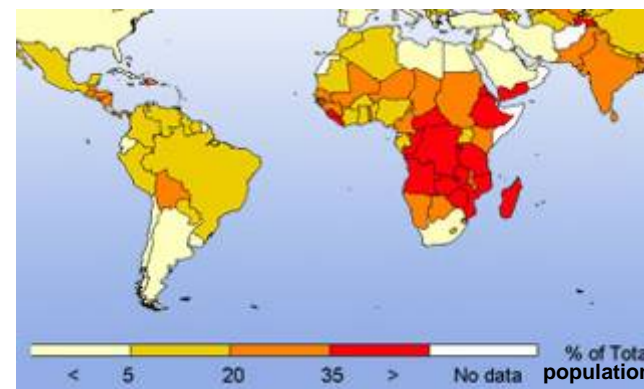
◆ The **3 last chain links** above show the factors for any solution:

- Rural Roads Offices operational in the regions
- Private transporters / traders entering rural areas
- Rural population using transport access provided

◆ The Transition from **subsistence to cash-crop** economy therefore is the general goal for the rural sector of SSA governments.



Official FAO Hunger Map 2005





Finding No. 10 Rural Roads contribute to MDG Success

Poverty Reduction in Rural Areas
with Increase of Production by Using better Seeds



- **Investments**
(Seeds, Fertilizer, ...)

- **Transport**
to and from Rural Markets



Poster AMIC Zambia 2005)

Conclusion:

- **Special Seeds** may increase production 3 to 9 times
- **Transport to and from Rural Markets**
(although 15-20% of sales price) must be secured by all means to avoiding loss of harvest.

Note:



Seed		Yield
Usability	Name	[t / ha]
Early	GV 412	4.5 - 6.0
Medium	MM 604	5.0 - 7.5
Full Season	MM 752	7.5 - 9.0

Yield without special seed is about 1 t/ha only, but good seeds enable an yield increase of up to 9 t/ha. Smallholder Subsistence Farmers cultivate c. 1 ha.

Input Prices per ton	
Maize Seed (Medium) in Ndola	1450 US \$
Fertilizer (Comp'D) in Ndola	500 US \$

Output Prices per ton	
Maize Sales Price	220 US \$
Wheat Sales Price	340 US \$

Source: AMIC 2005 / Zambia



Finding No. 11: Access to Rural Markets – A Task of different Stakeholders



Farm-to-Market Track (Uganda)

	Farm-to-Market Tracks	Highway-to-Market Roads	Provincial / National Highways
Aver. Distance	0 - 15 km	0 - 90 km	
Owner	Farmers (non classified tracks)	Province / State	State
Caretaker (Stakeholder)	Marketing Board	Rural Roads Office	Roads Agency



Weekly Rural Market directly at Highway (Butare-Cyangugu / Rwanda). No special Highway-to-Market Road necessary.



Finding No. 12: Main Bottleneck of Rural Transport

- Lack of Bridges and Culverts

A) Road Agencies in SSA may have 2 different mission goals of service provision:

- Facilitating **24 h Transport** on asphalted National Road Network
- Facilitating an **all-weather access** on earth and gravel roads to all Rural Markets of the country

B) In Rural Areas providing sufficient numbers of bridges and water crossings may be more important than the quality of individual rural roads and tracks.



Lack of bridge provision by Rural Roads Offices in Kindu / East Congo
(Local Self-help)






Bailey Bridge system for Rural Roads in Kindu / East Congo (GTZ Project)
(Two double T-steel beams covered by iron plate for each lane)

➔ Rural Roads Strategy in SSA may need a Review.



Main Recommendations:

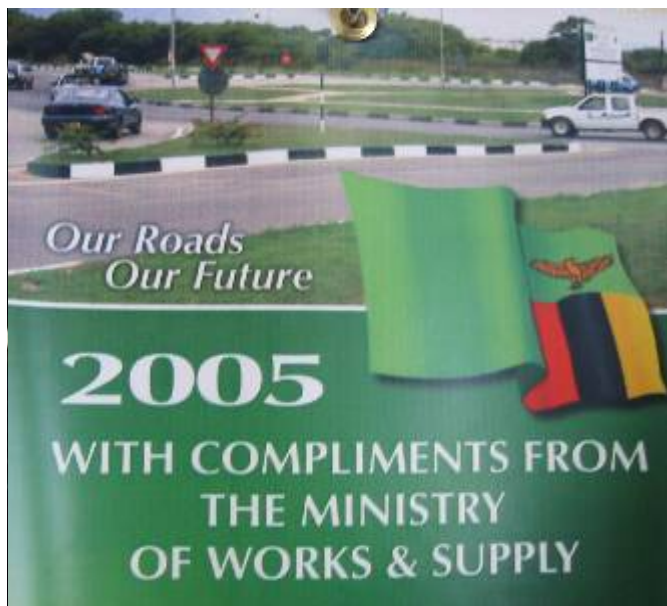
Road Institution	Suggested Program (ToR)
Road Agency 	Continuation of Institutional Development towards commercial Road Asset Management
	Secure well-timed Periodic Maintenance to prevent costly Road Rehabilitation
	Promote Board Reform
Road Fund 	Extend the field of responsibility to a FULL Road Transport Regulator balancing economic and social goals
	Secure Autonomy of the Road Fund in the Management and the Employment of experienced Professionals
	Pocure annually a Roads Provider Report and a Road User Report
Rural Roads 	Setup of decentralised Rural Road Offices
	Accept Priority Settings from Marketing Boards for increased cash-crop production
	Contruction of Briges and Culvarts for all-weather access to Rural Markets

➔ Secure juristic and legal framework for implementation



Closing the gap between vision and realities

Our Roads, Our Future – but **No Future without better Roads.**



Roads Poster of Zambian Ministry of Works & Supply. Truck stuck on Earth Roads in Eastern Congo.