

Africa Transport

Technical Note

Road Management Initiative
(RMI)



SSATP Note 20

October 1999

ROAD MAINTENANCE COMMERCIALIZATION: Opening up the dialog to road users and on equal terms. Setting up a national debate. Getting people talking. Introducing reforms. Transforming our own action methods. Gearing up.

The strategic game «*Tariff & Traffic*». The standard workshop designed around it. Lessons from successful tests in Madagascar, Guinea and Rwanda.

*Academic presentations or institutional rituals do not have much impact on an audience of road engineers... or even truckers. Establishing and nourishing a genuine national dialog require more powerful, more versatile and more lifelike tools. The RMI is now launching a new means of dissemination: «*Tariff & Traffic*». Being based on a CD-ROM is not what makes it so pedagogically powerful: basically it works as a vector for debate, putting both the road user and the high-ranking official at the same level when facing tangible problems of road and road transport.*

The purpose of this series is to share information on studies carried out by or of interest to the SSATP. The opinions expressed in the studies are those of the authors and not necessarily reflect the views of the World Bank or any of its affiliated organizations.

For information on these notes, contact by E-mail the following address:

ssatp@worldbank.org



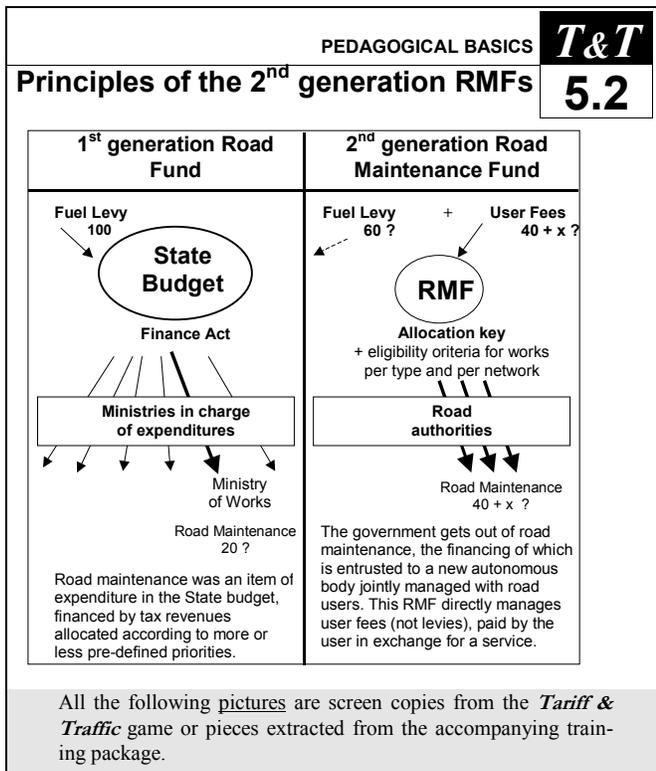
1. The *Tariff & Traffic* workshop: a key step in setting up a Road Maintenance Fund

In many Sub-Saharan African countries, the efficiency of the road maintenance system is not, or is no longer adequate to preserve the network, and provide users with a durable, appropriate level of service in relation to the investments made. Road projects are all too frequently condemned to inadequate or non-existent maintenance, which means that they are reduced to nothing long before the corresponding anticipated economic return has been generated.

To eradicate this plague, more and more countries on the African continent, frequently under pressure from the sector donors, are considering the creation of a "second generation" Road Maintenance Fund (RMF). **The general principle underlying the creation of these second generation funds is that of the "commercialization" of road maintenance.** The aim is to consider road maintenance as a commercial service, no longer financed from the State budget but from road utilization fees intended specifically for road maintenance, paid directly by road users and administered appropriately under their own control.



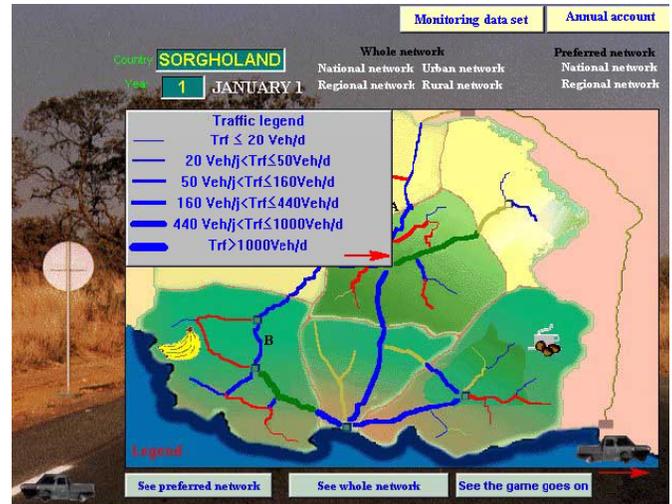
The Road Maintenance Fund thus acts as a local donor. It distributes its resources equitably between the authorities in charge of road network management, checks correct application of these resources, and monitors network maintenance performance. The introduction of this type of reform on a national scale requires extensive dialog: prior to selection of the appropriate legislative system first, and again when the operational tools are being set up.



This frequently involves the organization of an **intensive information workshop**, intended principally for the future co-managers of the RMF, and other parties involved in road maintenance. Such a workshop should enable all participants to obtain a clear understanding of the issues and objectives, as well as the major lines of approach to be adopted among the various basic options.

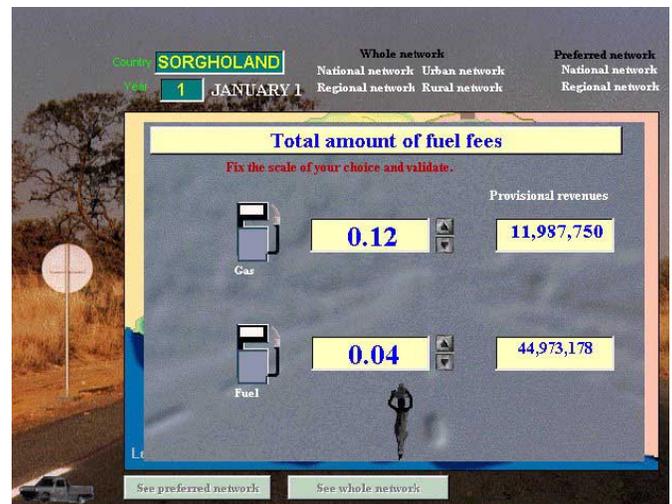
The *Tariff & Traffic* standard workshop, designed as an answer for such situations, is a versatile teaching tool covering a broad spectrum. It is designed for workshops lasting several days, coordinated by professional instructors and experts (or resource persons) from the road maintenance sector.

The core element of this new teaching technique is a highly interactive "game" module, where short teaching summaries are added to each sequence, reflecting the situations encountered by the players. These summaries, echoing with the game situations, are based on actual experience in African countries.



2. The *Tariff & Traffic* teaching game: the workshop's core element

This highly interactive training session is consequently based, as its main teaching tool, **on a role play**. The basic idea, using the simulation tool provided by the game (enabling simulation of long-term changes and joint decision-making), is to identify problems encountered in the sector, and the corresponding logic, while encouraging the exchange of ideas and different approaches through a well-structured discussion framework.



The simulation of joint decisions is a key teaching feature, based on user/institution dialog. This role play takes full account of the points of view of "silent" interest groups in the road sector, namely the road-users.

This provides a **teaching framework** which is used to highlight a number of key issues in the road maintenance sector, and certain fundamental related institutional logic, by means of **didactic summaries** accompanying the main phases of the game.

These didactic summaries, and the **mini-debates** which follow in certain cases, using pre-prepared screens or transparencies, provide short breaks, and the opportunity to analyze some of the decisions taken during the game, and their impact. This is also the opportunity for comment.

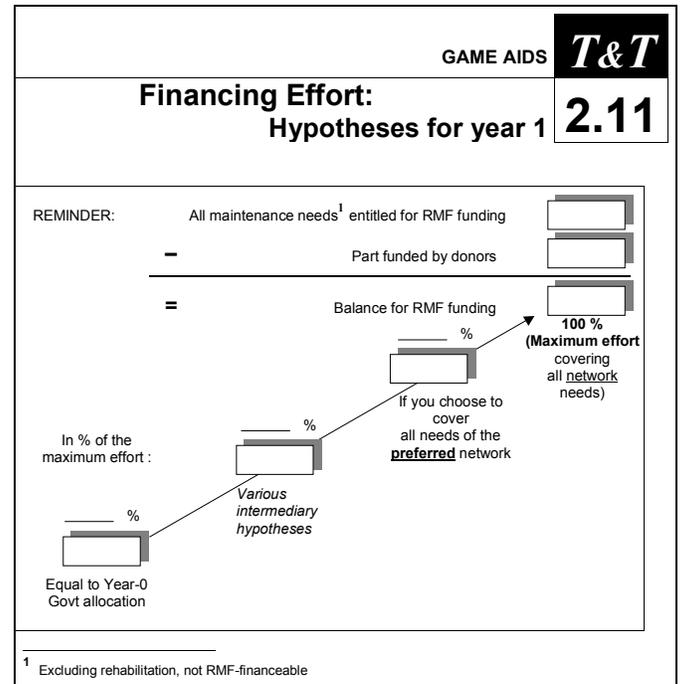
The didactic summaries fall into two main categories:

- a) A number of specific "**classroom questions**": these questions concern the major options for definition of the Road Maintenance Fund
- b) A number of **more technical** "*Further studies...*" type subjects:
 - * some of these deal with the terminology and main technical and economic principles of both road maintenance and road
 - * others cover particular aspects of the game, providing brief explanations of the models used and the logic they express

These interludes generally provide for explanations lasting between 5 and a maximum of 10 minutes, with as long again for brief discussion of the subject.

The general theme of the game is road management, in an imaginary country possessing a simplified road network.

The word "management" is taken here in its broadest sense, covering maintenance, operation, etc., although road maintenance is the core aspect. This corresponds to the field covered by the Road Management Initiative (RMI), aimed more at institutional, rather than technical or para-technical aspects (programming, etc.).



PEDAGOGICAL BASICS		T&T
Basics (25-word list)		5.6
Traffic Impact		
11.	Traffic / Heavy (or truck) traffic / Light traffic	
12.	Axleload / Aggressiveness / Aggression	
13.	Wet season barriers / "rain" barriers	
11. Traffic / Heavy (or truck) traffic / Light traffic:	Circulation of vehicles on roads. A distinction is made between light traffic (cars, etc.), which cause little damage to the road, and heavy traffic (trucks, etc.) which cause considerable damage.	
	If we rate at 1 the damage caused by a car passing, the damage caused by a truck passing must be rated at 50,000 to 100,000 (in other words, a truck causes as much damage as 50,000 to 100,000 private cars). The damage caused by a heavily overloaded truck must then be rated at 500,000 to 1,000,000.	
12. Axleload / Aggressiveness / Aggression:	The axleload determines both the pressure and the horizontal strains which the tire exerts on the pavement, and consequently the damage (the aggression) caused to the road surface by the vehicle. For equal loads, the aggressiveness of 2 trucks against the road can differ considerably according to the number, type and arrangement of their axes (the global load being unequally shared between the axes).	

3. The *Tariff & Traffic* game: running the module

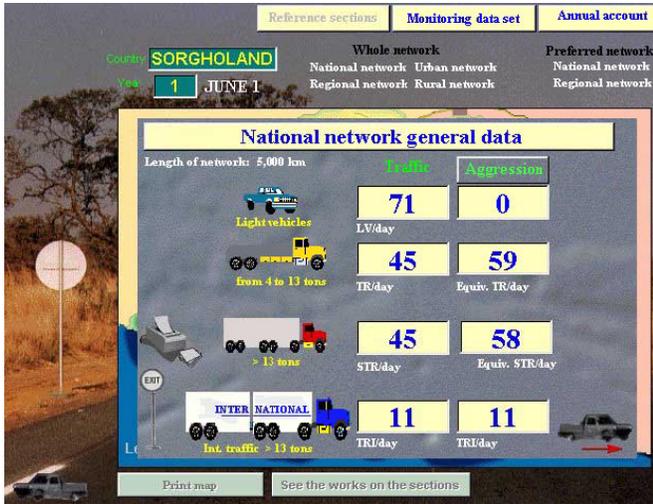
The *Tariff & Traffic* module is totally controlled and sequenced by a computer program.

When the teaching module is run, the trainees act as members of the Board of a Road Maintenance Fund, each representing one of the stakeholders (ministry, haulage companies, local authorities, etc.).

They discuss all the typical decisions involved: composition and scale of road charges, rules for allocation of funds and programming of work, management and operating methods, etc., and in certain cases take formal decisions (the 6 players forming the Board actually vote). They also discuss various road maintenance and road transport sector reforms which could be initiated.

As the game progresses, they have a direct overview of the impact of their decisions, such as changes in the condition of the road network of course, but also road traffic growth, work contractors' capacities, etc.

The players identify the external factors which can impede their decisions (fuel pump price constraints, reactions of haulage companies, effect of international competition, impact of transport costs on the national economy, etc.).



The game covers a period of 25 to 30 years, so that the effects of the maintenance policy applied by the players, on both the road network and the national economy, can be perceived.

This provides the opportunity to clarify many points, either with the assistance of the instructors, or as a result of discussion between the players. Each participant (hauler, road engineer, tax inspector, local authority representative, etc.) is placed in a position where he or she must explain and defend an individual point of view, but also understand the views of the others.

The game is designed for integration in a workshop, where the **real questions** of national road maintenance policy are discussed and addressed in other sequences, **in the light of the exchanges and contributions stimulated by the game.**

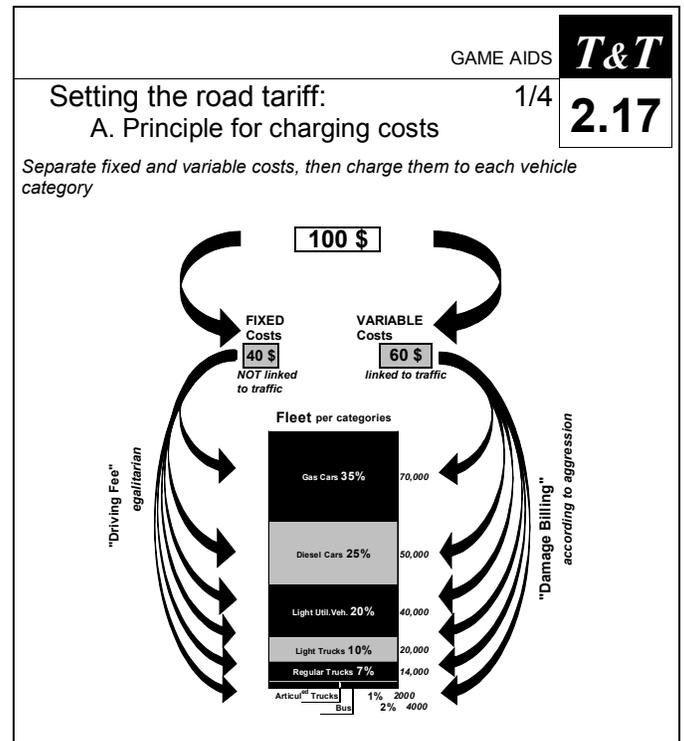
4. *Tariff & Traffic* teaching environment and workshop toolbox

This CD contains a complete set of complementary tools to help in structuring the workshop, including both the standard time schedule (which will naturally require adaptation), elements of the "parti-

part's handbook", and a complete set of visual and other aids (transparencies, quick-fire questionnaires, sub-group study themes and finalization grids, etc.).

A utility routine (under Excel) is also provided for **collective self-rating of institutional progress** in the road maintenance sector at national level. The marking method is standardized, and produces direct, automatic output of graphic data, which can be compared with previous situations or ratings for neighboring countries (all sub-Saharan African countries were covered by a survey using this method during 1998, and the results of this survey are supplied in the same form).

Another SSATP Technical Note is devoted to this quotation method..



The standard workshop program includes a sequence based on this rating process, which can be used to identify and discuss a number of key points in the context of the actual country, while referring to the situations encountered in the game. This makes a powerful contribution to the workshop teaching process.

The CD also includes a number of logistic aids (organization checklists, lists of equipment and supplies, room organization plans, forecast budget grid, etc.).

PEDAGOGICAL BASICS		T&T
Basics (25-word list)		5.6
Contents		
Road types		
1.	Paved (or sealed) roads ("asphalted" or "tarred")	
2.	Unpaved (or unsealed) roads and tracks	
Operation types		
3.	Routine maintenance	
4.	Periodic maintenance	
5.	Rehabilitation or reconstruction	
6.	Curative maintenance / preventive maintenance	
Works		
7.	Road menders / Road mending / Roadmen work / Lengthmen work / « Cantonnage »	
8.	Potholes	
9.	Patching	
10.	Reshaping / Regravelling	
Traffic impact		
11.	Traffic / Heavy (or truck) traffic / Light traffic	
12.	Axleload / Aggressiveness / Aggression	
13.	Wet season barriers / "rain" barriers	
Execution line		
14.	Owner / Road authority / Construction financing authority	
15.	Owner's agent / Owner's surrogate / Contracting agency	
16.	Construction authority	
17.	Force account	
Resources		
18.	Tax / Taxation / Levy	
19.	Fees / User fees	
20.	Road tariff	
Financing principles		
21.	Budget arbitration / Finance Act / Earmarking	
22.	Road "commercialization"	
Economic impact		
23.	Vehicle operating costs (VOC)	
24.	Cost-effectiveness / Internal rate of return (IRR)	
Responsibilities		
25.	Decentralization	

5. Next step: Setting up and training a mini-network of African RMI facilitators

Through the CD-ROM, this *Tariff & Traffic* toolbox is supplied here on a self-service basis, more to be used by workshop facilitators than by final users.

It has been developed for the purpose of organizing at the beginning of year 2000 a training scheme for African instructors (French version initially, English version afterwards). The practical objective for such a training program is to **set up and train an appropriate mini-network of African *Tariff & Traffic* facilitators**, able for the coming years to:

- intervene in tandem (one senior expert from the government, one consultant/facilitator from the private sector) to facilitate standard *Tariff & Traffic* workshops or by-products everywhere in Africa, using the corresponding training kit, on behalf of the SSATP or any RMI donor,
- respond as consultants/experts within the RMI field, each one according to his/her own career and skills, with their potential strongly enlarged by acquiring and sharing the whole analysis corpus, the strategic plan and the toolkit of the RMI.

For the RMI, developing such powerful dissemination tools and setting up the corresponding African dissemination mini-network (local consultants and experts) constitute an answer **(i)** to the numeric weakness of the Washington RMI team facing the field demand, **(ii)** to the poor performance of the quasi-academic usual dissemination tools for promoting reforms, specially in building road-user capacity to soundly dialog with road authorities, **(iii)** to the positioning of our classical country coordinator network, too para-institutional to guarantee them a 360-degree credibility, and **(iv)** to the disappointing overall answer of local consultants in institutional matters together with the not-appetizing-enough market volume (as proven by the specific market study carried out in African French-speaking countries by mid-1998, in close contact with all the sector donors).

GAME AIDS		T&T
INTEREST GROUPS: Typology		2.5
THOSE WHO PAY <small>REPRESENTED ON THE BOARD</small>	<ul style="list-style-type: none"> • Final users of the road: heavy goods transport and public transport professionals (including urban and rural taxis). • Indirect users: those in business benefiting from the collection and delivery of their goods (CCI, rural and urban populations) with an obvious economic impact. 	<i>The object is to increase the capacity of these interest groups to influence matters.</i>
THOSE WHO ADMINISTER <small>REPRESENTED ON THE BOARD</small>	<ul style="list-style-type: none"> • The central government in the framework of its general competency in terms of national policy. • The road authorities: Departments in charge of road sub-networks and local governments (for urban roads, rural roads, etc.) 	<i>The object is to get them to know and understand the point of view of the users who pay.</i>
THOSE WHO IMPLEMENT <small>NOT REPRESENTED ON THE BOARD</small>	<ul style="list-style-type: none"> • Public works employees. • Private providers: Work and engineering firms Small and medium sized contractors specialized in road maintenance. 	<i>Each of these two groups risks being prejudiced. <i>In certain cases they may be in the situation of competing against each another (if there are works on force account).</i></i>

Hence the field dissemination potential on road commercialization experience will be dramatically geared up. This expectation was proved by the standard workshop's tests, which took place in the local processes of RMF setting-up: in each case the national reform process gained **decisive momentum**.

The *Tariff & Traffic* teaching module innovates strongly in the process of disseminating the RMI message. We shall be particularly interested to hear your reaction to this new tool.



The *Tariff & Traffic* CD-ROM

The *Tariff & Traffic* CD-ROM will be distributed free of charge from December 1999 by the SSATP. It is fully bilingual English / French.

This CD works with any personal computer (PC), with 486 processor (at least), Windows 3.1 or later version, Word 97 or later version, and Excel 5.0 or later version. The game and the whole pedagogical package can be activated from the CD or else transferred to your hard disk; the installation utility lets you choose.

This CD allows to create a set of installation diskettes. You will then be able to install on another computer without a CD-ROM drive.

Intellectual property rights covering the *Tariff & Traffic* game and the accompanying teaching documentation, stored on this CD, are held by the World Bank which intends to encourage its free circulation.

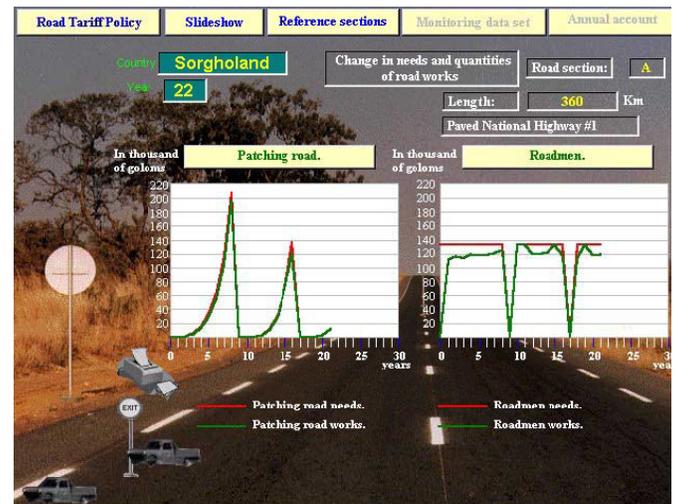
It may consequently be copied and used without restriction, for any pedagogical non-commercial purpose. But using the content for training or events of commercial nature meets some restriction.

Authors

Tariff & Traffic has been developed for the World Bank by *Interface Etudes et Formation*, with the assistance of *Calimagine* (Michel Marc).

The economic model for the game was drawn up by Benoît Ninnin, consultant.

The concept was designed by Louis Fernique, road policy specialist (RMI / AFTT2, Africa Region, World Bank), who also supervised its development, including teaching tests in Guinea, Rwanda and Madagascar.



About RMI

The *Road Management Initiative* (RMI) is a central component of the *Sub-Saharan Transport Policy Program* (SSATP), a joint undertaking of the United Nations Economic Commission for Africa (UNECA) and the World Bank.

The primary objective of the RMI has been to secure sustainable improvements in road sector performance in Sub-Saharan Africa. The RMI is now an efficient, flexible tool, enabling countries to identify and address their road management policy problems. RMI experience has demonstrated that, to be effective, reforms must be country-specific and involve both public and private sectors in genuine partnerships.

Both African beneficiary countries and donors are involved in the RMI agenda, from defining to monitoring. Program management is the responsibility of the World Bank. The RMI receives sponsorship from a number of bilateral donors, as well as the European Union and the World Bank.

Contacts

For further information about RMI, or for ordering free *Tariff & Traffic* CD-ROMs (to be available from December 1999), please visit the Internet address: <http://www.worldbank.org/afr/ssatp>, or contact by E-mail: ssatp@worldbank.org, or send a mail to: **SSATP, The World Bank, 1818 H Street NW, Washington, D.C. 20433, USA.**