

# The field test

Based on clear goals set at the end of 1997 in Lomé between RMI partners, the terms of reference of the SOURCE project were established early in 1998. The research and experimentation phase was entrusted to a multidisciplinary team, under the direct supervision of the RMI team, and which included: a coordinator also in charge of field test logistics, a scientific partner for the road engineering aspects, an expert for the economic and methodological aspects.

The first series of field tests was developed in four countries (Cameroon, Guinea, Ghana and Madagascar) for some 1,000 sample-kms per country, in July-August 1998. These tests were the core of the first phase, the conclusions of which were presented to donors and RMI African partners at the end of 1998 in Dar-Es-Salaam.

## First test campaign over 4 countries

3,800 km of roads chosen in 4 countries were subjected to the following:

- exhaustive roughness measurements using a bump integrator,
- exhaustive multicriteria recordings of deterioration (VIZIR on paved roads, VIZIRET on unpaved roads), entered on DESY instrumentation,
- measurements of oncoming traffic both while travelling and from fixed facilities,
- measurements of common speeds, combining accurate exhaustive measurements and statistical measurements using 6 different protocols.

Number of roads links		Length		Alignment [1,2,3]		Traffic Veh/H		Speed km/H		Condition	
		km	%	Slope	Bendiness	LV	HV	LV	HV	Roughness IRI	Deterioration rating
Unpaved	33	961	25%	1.1	1.2	5	3	35	25	8.4	20% (1)
Paved	122	2811	75%	1.8	1.7	64	8	67	55	4.1	3.5 (2)
<b>Total</b>	<b>155</b>	<b>3772</b>	<b>100%</b>	<b>1.6</b>	<b>1.6</b>	<b>49</b>	<b>7</b>	<b>65</b>	<b>50</b>	<b>5.2</b>	

Note1: the mean speeds are harmonic means weighted by traffic volumes (the arithmetic mean is in fact determined from the travel times).

Note 2: all the other means are arithmetic means, weighted by lengths.

(1) Unpaved, VIZIRET methodology: % of length affected by deterioration in rank 3: deformation, rutting or potholes.

(2) Paved, VIZIR methodology: overall rating of 1 to 7 (assessment data for severity and extent of deformation, cracking and repairs).

## 2nd stage: a measurement campaign in real conditions

In March 1999, a full measurement campaign in Ghana was entrusted to a third party service provider, a local engineering firm, under the supervision of the project coordination body. The main aim was to test in an operational context the aids, tools and training resources required to learn the SOURCE method, validate field costs and develop a quality control protocol applied to

measurements (training of crews, certification, etc.). An enlarged network of 6,400 km was thus measured (the nominal "SOURCE reference network" is around 3,800 km).

The main lessons drawn from this experimentation, its unprocessed results and the prototype tools of the method were presented to donors and RMI partners at the end of April 1999 in Washington.

The consolidated budget for the SOURCE project, publication and distribution not included, but extensive field tests included, was below USD 350,000.

		Rank 1 to 4	Length km	Of which paved km %	
<b>GHANA</b>	<b>SOURCE Reference network</b>	<b>1</b>	1128	1105	98%
		<b>2</b>	1621	1102	68%
		<b>3</b>	1078	367	34%
		Sub Tot [1-3]	<b>3827</b>	<b>2576</b>	<b>67%</b>
		<b>4</b>	2585	1111	43%
		Tot [1-4]	<b>6412</b>	<b>3719</b>	<b>58%</b>
<b>Entire experimentation network</b>					