

The State of South Africa's Transport Networks

A comparative review of the IRF's
2007 International Road Statistics:
(2005 data)

Transportation & Logistics: PricewaterhouseCoopers EBS Business School
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**VOLUME 3: EMERGING MARKETS –
NEW HUBS, NEW SPOKES, NEW INDUSTRY
LEADERS?**

South Africa's logistic competitors

- **China** Logistics Performance Index 3.49 (#27)
- **South Africa** Logistics Performance Index 3.46 (#28)
- **Turkey** Logistics Performance Index 3.22 (#39)
- **Brazil** Logistics Performance Index 3.20 (#41)
- **India** Logistics Performance Index 3.12 (#47)
- **Mexico** Logistics Performance Index 3.05 (#50)
- **Russia** Logistics Performance Index 2.61 (#94)
- **South Africa's World Competitiveness Ranking (#54)**



INTERNATIONAL ROAD FEDERATION
FEDERATION ROUTIERE INTERNATIONALE

IRF WORLD
ROAD
STATISTICS

2007

DATA 2000-2005

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* : Detailed list of data tables in the first page of each section.

We (the IRF) have compiled data from different sources at international and intergovernmental levels in order to produce this year's edition.

Herewith is a shortlist:

- United Nations Economic Commission for Europe ;
- United Nations Economic Commission for Africa ;
- World Bank ;
- International Monetary Fund ;
- International Energy Agency ;
- African Development Bank ;
- Asian Development Bank ;
- OECD : Organization for Economic Co-operation and Development ;
- Central Intelligence Agency, USA ;
- Eurostat ;
- ECMT : European Conference of Ministers of Transport ;
- GTZ : German Technical Cooperation ;
- OICA : International Organization of Motor Vehicles Manufacturers ;
- ERF : European Road Federation.
- Finally, we would like to express our gratitude to the LARSEN & TOUBRO Ltd.

➤ South Africa thank SANRA(L), SABITA and the RTMC

There the good news ends.....

- Except for Road Safety data, South Africa's comes from 2000 and remains largely incomplete
- Competitors' data is complete and current viz 2005
- Current IRF statistics are dated 2010, data up to 2008, available from SARF Head Office in Braamfontein at no cost if you are a paid up member of SARF

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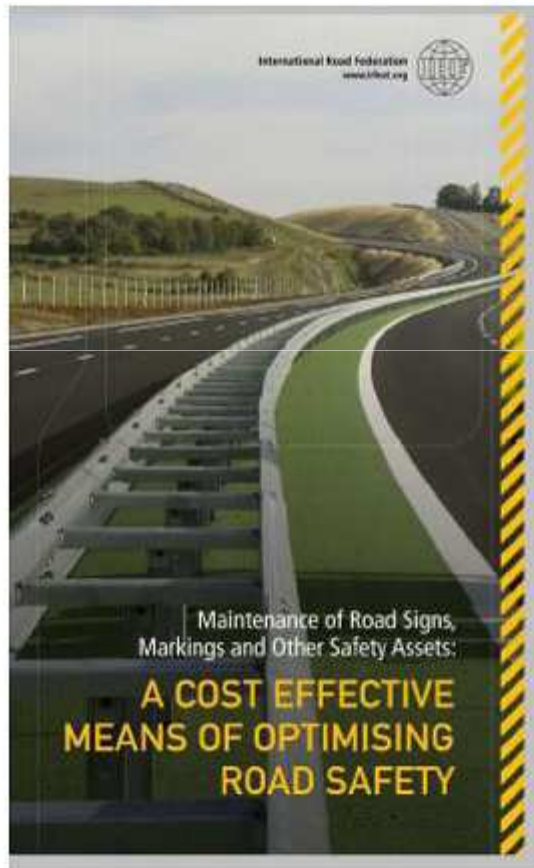
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postage if you order more than 10 copies.

Generic observations

- Botswana now leading South Africa and Zimbabwe in terms of an effective, balanced road network in Southern Africa
- South Africa's road and rail (and port) infrastructure is beginning to lag its international logistics competitors (the other six identified earlier)
- All liquid fuel prices are increasing from peak oil. (Brazil the only country appearing to buck this trend possibly due to its moving into ethanol rather than methanol many years ago)
- World trend back towards rail is confirmed

Generic observations

- While the title says 'International World Roads Statistics' they extend very comprehensively into rail and liquid energy, also accommodating economic indicators and environmental considerations (eg fuel consumption and carbon emissions), although not yet logistics or public transport data
- **RPF requested to consider how to bring South Africa back on board in providing timeous, comprehensive internationally comparative quality data within the international data set already described by and existent with the IRF** (with extension into public transport, logistics and other related energy data eg electricity for both rail traction and private vehicles)

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THANK YOU

- **China**

- • GDP 2009 US\$ 4,757.7bn

- • GDP per capita 2009 US\$ 3,566

- • Merchandise export 2008 US\$ 1,428.3bn

- • Merchandise import 2008 US\$ 1,132.4bn

- • Urbanisation 2009 46.6 %

- • Size of logistics market ('08) US\$ 506bn

- • Logistics Performance Index 3.49 (#27)

- **South Africa**

- • GDP 2009 US\$ 277.4bn

- • GDP per capita 2009 US\$ 5,635

- • Merchandise export 2008 US\$ 80.8bn

- • Merchandise import 2008 US\$ 99.5bn

- • Urbanisation 2009 61.2 %

- • Size of logistics market ('09) US\$ 46bn

- • Logistics Performance Index 3.46 (#28)

- **Turkey**

- • GDP 2009 US\$ 593.5bn
- • GDP per capita 2009 US\$ 8,427
- • Merchandise export 2008 US\$ 132.0bn
- • Merchandise import 2008 US\$ 202.0bn
- • Urbanisation 2009 72.9 %
- • Size of logistics market ('08) US\$ 59bn
- • Logistics Performance Index 3.22 (#39)

- **Brazil**

- • GDP 2009 US\$ 1,481.5bn
- • GDP per capita 2009 US\$ 7,737
- • Merchandise export 2008 US\$ 197.9bn
- • Merchandise import 2008 US\$ 182.4bn
- • Urbanisation 2009 85.4 %
- • Size of logistics market ('10) US\$ 150bn
- • Logistics Performance Index 3.20 (#41)
- Seven routes to one goal: growth.

- **India**

- • GDP 2009 US\$ 1,242.6bn
- • GDP per capita 2009 US\$ 1,033
- • Merchandise export 2008 US\$ 177.5bn
- • Merchandise import 2008 US\$ 293.4bn
- • Urbanisation 2009 29.8 %
- • Size of logistics market ('10) US\$ 125bn
- • Logistics Performance Index 3.12 (#47)

- **Mexico**

- • GDP 2009 US\$ 866.3bn

- • GDP per capita 2009 US\$ 8,040

- • Merchandise export 2008 US\$ 291.7bn

- • Merchandise import 2008 US\$ 323.2bn

- • Urbanisation 2009 77.5 %

- • Size of logistics market ('03) US\$ 50bn

- • Logistics Performance Index 3.05 (#50)

- **Russia**

- • GDP 2009 US\$ 1,254.7bn

- • GDP per capita 2009 US\$ 8,873.6

- • Merchandise export 2008 US\$ 471.6bn

- • Merchandise import 2008 US\$ 291.9bn

- • Urbanisation 2009 73.1 %

- • Size of logistics market ('09) US\$ 49bn

- • Logistics Performance Index 2.61 (#94)

Angola

51'429

Paved roads % 10.4

Road density Km/Km2 0.04

% motorways 0.00

15'941'392 1'410 20.61

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 8

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents 4'842

Road fatalities 942

Fatal. /100'000 pop. 6.63

Road sector energy consumption, ktoe 721

Total, ktoe 9'120 % Road / Total 7.91

Brazil

1'751'868

Paved roads %

Road density Km/Km2 0.2

% motorways 0.00

186'404'913 3'550 2.30

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 136

Motor vehicles / 1'000 pop. 170

Motor vehicles / Km of road 18

Road accidents 112'457

Road fatalities 6'119

Fatal. /100'000 pop. 3.33

Road sector energy consumption, ktoe 43'995

Total, ktoe 193'665 % Road / Total 22.72

Road sector energy consumption, ktoe 4'926
Total, ktoe 26'355 % Road / Total 18.69
1
2
China
1'930'544
Paved roads % 81.6
Road density Km/Km2 0.21
% motorways 1.83
1'304'500'000 1'740 10.20
Population 2005 GNI per capita 2005
Current US \$
GDP Growth 2005
Annual %
Total road Network
Km
Passenger cars / 1'000 pop. 15
Motor vehicles / 1'000 pop. 24
Motor vehicles / Km of road 16
Road accidents 450'254
Road fatalities 98'738
Fatal. /100'000 pop. 7.57
Road sector energy consumption, ktoe 57'260
Total, ktoe 1'381'297 % Road / Total 4.15

2

Colombia

164'257

Paved roads %

Road density Km/Km2 0.16

% motorways 0.00

45'600'244 2'290 5.13

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 35

Motor vehicles / 1'000 pop. 59

Motor vehicles / Km of road 16

Road accidents 229'184

Road fatalities 5'483

Fatal. /100'000 pop. 12.21

Road sector energy consumption, ktoe 5'758

Total, ktoe 28'166 % Road / Total 20.44

Egypt, Arab Rep.

92'370

Paved roads % 81.0

Road density Km/Km2 0.09

% motorways

74'032'884 1'260 4.94

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 27

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents 2'080

Road fatalities 1'321

Fatal. /100'000 pop. 1.82

Road sector energy consumption, ktoe 9'028

Total, ktoe 54'258 % Road / Total 16.64

India

3'383'344

Paved roads % 47.4

Road density Km/Km2 1.03

% motorways 0.00

1'094'583'000 730 9.23

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 8

Motor vehicles / 1'000 pop. 12

Motor vehicles / Km of road

Road accidents 406'726

Road fatalities 85'998

Fatal. /100'000 pop. 8.08

Road sector energy consumption, ktoe 29'138

Total, ktoe 548'661 % Road / Total 5.31

2

Indonesia

368'360

Paved roads % 58.0

Road density Km/Km2 0.19

% motorways

220'558'000 1'280 5.60

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop.

Motor vehicles / 1'000 pop. 109

Motor vehicles / Km of road 62

Road accidents 12'267

Road fatalities 8'762

Fatal. /100'000 pop. 4.08

Road sector energy consumption, ktoe 20'641

Total, ktoe 164'618 % Road / Total 12.54

Kenya

63'265

Paved roads % 14.1

Road density Km/Km2 0.11

% motorways 0.00

34'255'722 540 5.81

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 9

Motor vehicles / 1'000 pop. 18

Motor vehicles / Km of road 10

Road accidents 10'717

Road fatalities 2'264

Fatal. /100'000 pop. 6.76

Road sector energy consumption, ktoe 804

Total, ktoe 15'753 % Road / Total 5.10

Korea, Rep.

102'293

Paved roads % 76.8

Road density Km/Km2 1.03

% motorways 2.90

48'294'143 15'840 3.96

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 230

Motor vehicles / 1'000 pop. 319

Motor vehicles / Km of road 151

Road accidents 214'171

Road fatalities 6'376

Fatal. /100'000 pop. 13.2

Road sector energy consumption, ktoe 26'071

Total, ktoe 206'297 % Road / Total 12.64

Libya

83'200

Paved roads % 57.2

Road density Km/Km2 0.05

% motorways

5'853'452 5'530 3.53

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 232

Motor vehicles / 1'000 pop. 257

Motor vehicles / Km of road

Road accidents

Road fatalities

Fatal. /100'000 pop.

Road sector energy consumption, ktoe 3'637

Total, ktoe 18'031 % Road / Total 20.17

Malaysia

98'721

Paved roads % 81.3

Road density Km/Km2 0.3

% motorways 1.84

25'347'368 4'970 5.16

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 225

Motor vehicles / 1'000 pop. 272

Motor vehicles / Km of road 72

Road accidents 298'651

Road fatalities 6'282

Fatal. /100'000 pop. 25.71

Road sector energy consumption, ktoe 12'371

Total, ktoe 56'655 % Road / Total 21.84

Malta

2'254

Paved roads % 87.5

Road density Km/Km² 7.04

% motorways 0.00

403'500 13'610 2.49

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 523

Motor vehicles / 1'000 pop. 636

Motor vehicles / Km of road 113

Road accidents 1'194

Road fatalities 13

Fatal. /100'000 pop. 3.24

Road sector energy consumption, ktoe 196

Total, ktoe 892 % Road / Total 21.97

% motorways 3.72
1'243'253 5'250 4.57
Population 2005 GNI per capita 2005
Current US \$
GDP Growth 2005
Annual %
Total road Network
Km
Passenger cars / 1'000 pop. 96
Motor vehicles / 1'000 pop. 130
Motor vehicles / Km of road 79
Road accidents 19'495
Road fatalities 144
Fatal. /100'000 pop. 11.67
Road sector energy consumption, ktoe Total,
ktoe % Road / Total
1
2
Mexico
355'796
Paved roads % 37.0
Road density Km/Km2 0.18
% motorways 1.72
103'089'133 7'310 2.96
Population 2005 GNI per capita 2005

Mexico

355'796

Paved roads % 37.0

Road density Km/Km2 0.18

% motorways 1.72

103'089'133 7'310 2.96

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 137

Motor vehicles / 1'000 pop. 208

Motor vehicles / Km of road 90

Road accidents 29'464

Road fatalities 4'710

Fatal. /100'000 pop. 4.57

Road sector energy consumption, ktoe 38'295

Total, ktoe 159'966 % Road / Total 23.94

Namibia

42'237

Paved roads % 12.8

Road density Km/Km2 0.05

% motorways

2'031'252 2'990 3.50

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 42

Motor vehicles / 1'000 pop. 85

Motor vehicles / Km of road 4

Road accidents 8'615

Road fatalities 340

Fatal. /100'000 pop. 17.35

Road sector energy consumption, ktoe 475

Total, ktoe 1'271 % Road / Total 37.37

Nigeria

193'200

Paved roads % 15.0

Road density Km/Km2 0.21

% motorways 0.00

131'529'669 560 6.94

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 17

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents 14'279

Road fatalities 5'351

Fatal. /100'000 pop. 4.16

Road sector energy consumption, ktoe 8'834

Total, ktoe 97'825 % Road / Total 9.03

Russian Federation

537'289

Paved roads %

Road density Km/Km2 0.03

% motorways 0.00

143'113'650 4'460 6.40

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 139

Motor vehicles / 1'000 pop. 174

Motor vehicles / Km of road 48

Road accidents 208'558

Road fatalities 34'506

Fatal. /100'000 pop. 23.99

Road sector energy consumption, ktoe 37'713

Total, ktoe 639'680 % Road / Total 5.90

Singapore

3'234

Paved roads % 100.0

Road density Km/Km² 4.63

% motorways 4.71

4'341'800 27'580 6.38

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 101

Motor vehicles / 1'000 pop. 137

Motor vehicles / Km of road 183

Road accidents 6'705

Road fatalities 173

Fatal. /100'000 pop. 3.98

Road sector energy consumption, ktoe 2'021

Total, ktoe 21'770 % Road / Total 9.28

South Africa

364'131

Paved roads % 17.3

Road density Km/Km² 0.3

% motorways 0.07

46'888'200 4'770 4.87

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 98

Motor vehicles / 1'000 pop. 143

Motor vehicles / Km of road

Road accidents 131'794

Road fatalities 14'316

Fatal. /100'000 pop. 30.53

Road sector energy consumption, ktoe 12'118

Total, ktoe 121'844 % Road / Total 9.95

Turkey

426'914

Paved roads %

Road density Km/Km2 0.54

% motorways 0.42

72'065'000 4'750 7.38

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 80

Motor vehicles / 1'000 pop. 117

Motor vehicles / Km of road 20

Road accidents 533'795

Road fatalities 4'525

Fatal. /100'000 pop. 6.28

Road sector energy consumption, ktoe 10'572

Total, ktoe 78'793 % Road / Total 13.42

Venezuela, RB

96'155

Paved roads % 33.6

Road density Km/Km2 0.11

% motorways

26'577'000 4'820 9.33

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 94

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents

Road fatalities

Fatal. /100'000 pop.

Road sector energy consumption, ktoe 12'381

Total, ktoe 53'104 % Road / Total 23.31

Vietnam

222'179

Paved roads %

Road density Km/Km2 0.68

% motorways

83'119'000 620 8.42

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop.

Motor vehicles / 1'000 pop. 8

Motor vehicles / Km of road

Road accidents 19'852

Road fatalities 11'319

Fatal. /100'000 pop. 13.92

Road sector energy consumption, ktoe 5'028

Total, ktoe 44'234 % Road / Total 11.37

Zambia

91'440

Paved roads % 22.0

Road density Km/Km2 0.12

% motorways 0.00

11'668'457 500 5.20

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop.

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents

Road fatalities

Fatal. /100'000 pop.

Road sector energy consumption, ktoe 253

Total, ktoe 6'781 % Road / Total 3.73

Zimbabwe

97'267

Paved roads % 19.0

Road density Km/Km2 0.25

% motorways 0.00

13'009'534 350 -6.50

Population 2005 GNI per capita 2005

Current US \$

GDP Growth 2005

Annual %

Total road Network

Km

Passenger cars / 1'000 pop. 45

Motor vehicles / 1'000 pop.

Motor vehicles / Km of road

Road accidents 10'382

Road fatalities 1'433

Fatal. /100'000 pop. 11.38

Road sector energy consumption, ktoe 467

Total, ktoe 9'568 % Road / Total 4.88

Table 2.2 : Main characteristics of road networks per country

- Brazil 2004 1'751'868 0.20 0.00
- China 2005 1'930'544 81.62 0.21 1.83
- Ghana 2003 47'787 17.92 0.20 0.00
- Kenya 2004 63'265 14.12 0.11 0.00
- Korea, Rep. 2005 102'293 76.82 1.03 2.90
- Malaysia 2004 98'721 81.32 0.30 1.84
- Mexico 2005 355'796 36.98 0.18 1.72
- Russian Federation 2001 537'289 0.03 0.00
- South Africa 2001 364'131 17.30 0.30 0.07
- Tunisia 2004 19'232 65.80 0.12 1.36
- Turkey 2005 426'914 0.54 0.42