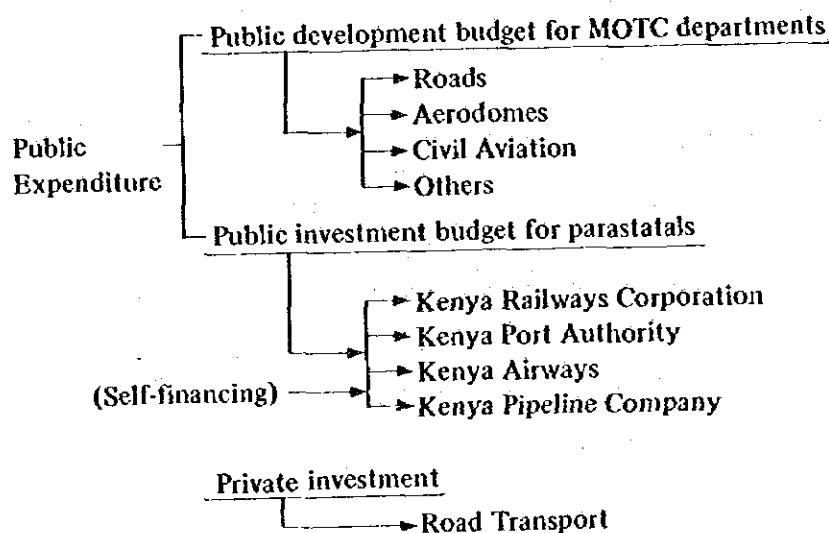


Appendix III Modal Distribution of Public Capital Expenditure for Transport Sector in Kenya

Development and investment for the transport sector in Kenya can be divided into three general categories: Public development expenditure for MOTC departments, public investment expenditure to parastatals, and private investment in the private sector. Development and investment by mode is illustrated generally in the diagram below:



Past development and investment budgets are indicated in Tables 1 and 2. Because only the principal modes are included in Table 1, direct comparison between the two is difficult. Nevertheless, the portion used by the "airways", "civil aviation", and "others" can be assumed to be the same as shown in Table 2 for convenience.

Comparing the third and the fourth Five-year Plans, the modal shares show a marked difference. The third plan placed emphasis on railroads, while the fourth was a road-oriented plan. When the shares of roads for fiscal 1981/82 and 1982/83 are studied, they are 75.8% and 70.1%, respectively.

Of the public development expenditure for roads, major roads (primary level and above) have constituted around 60 to 70% in the past.

Table 1 Development and Investment Budget by Mode in the Third Development Plan

Major Modes	Development & Investment Budget (KE'000)	Share Percentage (%)	Estimated Share after Modification (%)
Roads	87,545	43.6	40.6
Aerodomes	23,687	11.8	11.0
Railways	58,718	29.3	27.3
Harbours	16,713	8.3	7.7
Pipeline	14,000	7.0	6.5
Total	200,663	100.0	93.1

Table 2 Development and Investment Budget in the Fourth Development Plan

Mode	Development & Investment Budget (KE'000)	Share Percentage (%)
Roads	205,582	67.6
Aerodomes	16,146	5.4
Civil Aviation	7,800	2.6
Railways	31,754	10.6
Harbours*	28,886*	9.6*
Airways	9,505	3.2
Others	3,213	1.1
Total	299,886	100.0

* Including self-financing.

Appendix IV. Summary of the Kenyan Nationwide OD Traffic Survey

1. Objective

This study was made to provide basic information on highway transport in Kenya through an OD (Origin and Destination) traffic survey. The collected data allows formulation of a highway and highway transport development plan in Kenya.

2. Period and Sites

The survey was made in March 1983 at 17 sites along Kenya's International and National Trunk Roads (see Fig. 1 and Table 1).

3. Method

An OD survey and traffic volume count survey were undertaken.

o OD survey

A sampling survey was performed by interviewing drivers. The items covered are summarised in Table 2. The survey period at each site was 12 hours from 7:00 a.m. to 7:00 p.m.

o Traffic volume count survey

A traffic volume count was made at the same sites as the OD survey for a period of 36 hours from 7:00 a.m. to 7:00 p.m. the following day.

The sampling conditions of the OD survey and the result of the traffic volume count are summarised in Table 3.

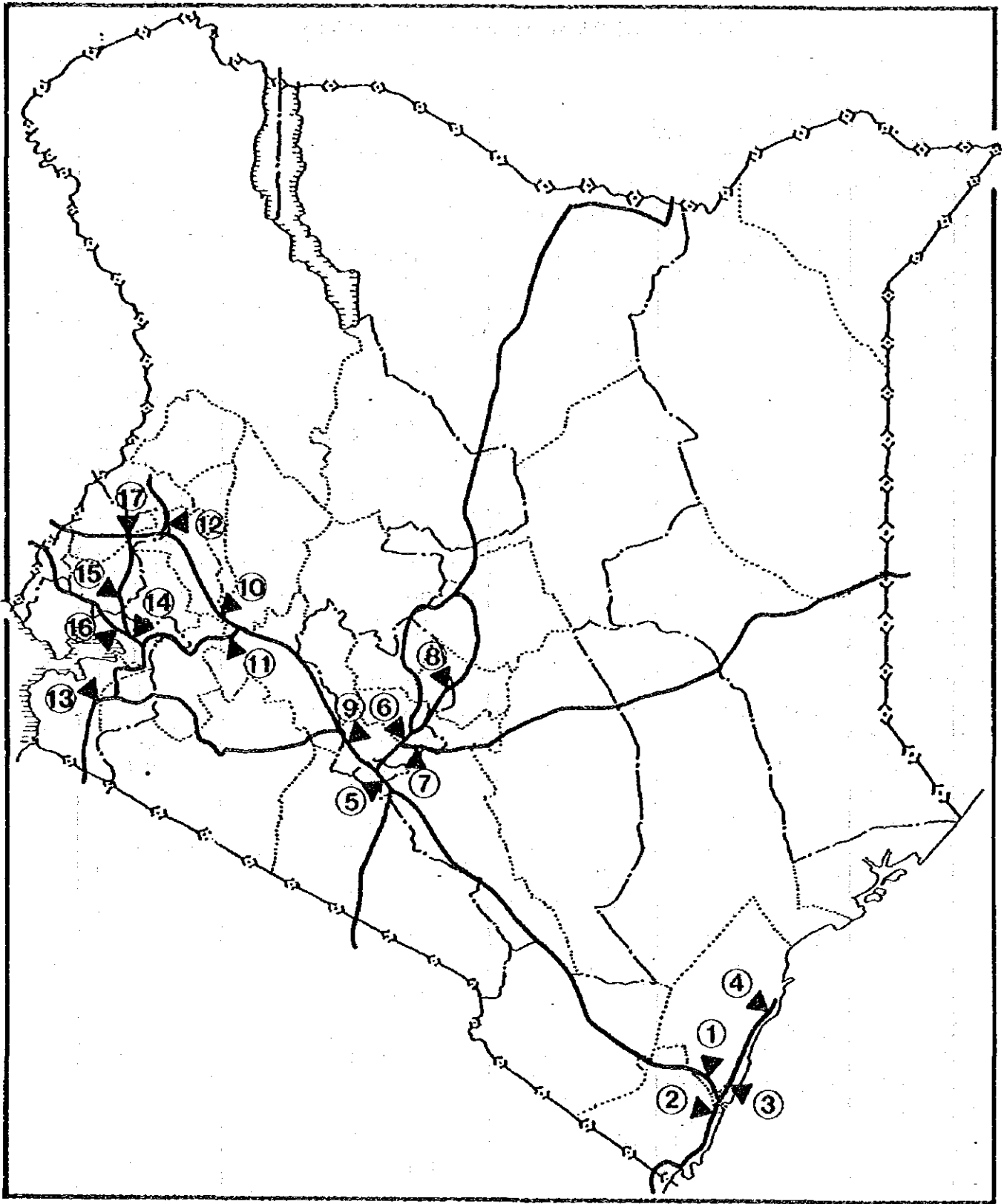


Fig. 1 OD Survey Sites

Table 1 Traffic Survey Stations, Dates and Sites

Station Number	Survey		Survey Site	
	Date	Day of Week	Site Name	OD No. Site
1	3/7 - 3/8	M, Tu	MARIAKANI	A109
2	"	"	WAA	A 14
3	"	"	SHIMO LA TEMA	B 8
4	"	"	MALINDI	B 8
5	3/10 - 3/11	Th, F	ATHIRIVER	A 10
6	"	"	MURANG'A	A 2
7	"	"	THIKA	A 3
8	"	"	EMBU	B 6
9	3/14 - 3/15	M, Tu	LIMURU (LIRONI)	A104
10	"	"	MAKUTANO	A104
11	"	"	MAU SUMMIT	B 1
12	"	"	ELDORET	B 2
13	3/17 - 3/18	Th, F	RONGO	A 1
14	"	"	AHERO	A 1
15	"	"	CHAVAKALI	A 1
16	"	"	KISIAN	B 1
17	2/3	Th	WEBUE	A104

Table 2 OD Survey Contents

Item		Contents
Vehicle Type		Motor Cycle, Car, Light Good, Light Good Matatu, Medium Good, Medium Good Tanker, Heavy Good, Heavy Good Tanker, Bus
Licence Type		Public Carrier, Private Carrier, Government Vehicle
Origin and Destination	Nation Classification	Kenya, Rwanda, Zaire, Uganda, Tanzania, Ethiopia, Somali, Sudan, other Africa
	Inside of Kenya	8 provinces
		41 districts
	Sub local	
Establishment Type		Residential, Farm, Factory, Retail/Market, Quarry, Construction Site, Wholesale, Terminal, Railroad, Warehouse, Harbour, Lumbering, Education, Hospital
Trip Purpose		Going to Work, Business, Going Home, Tourist, Personal, Recreation
Carrying Capacity		Tons, Litres, Persons
Volume		5 Classes from Full to Empty
Commodity		Agricultural Products, Industrial Products and other Products 64 Possible Commodities

Table 3 OD Survey Sampling Conditions

Station No.	OD Survey Sample Number	Number of Vehicles Counted at OD Site	Sampling Rates
1	581	1,199	0.48
2	1,222	1,594	0.77
3	699	1,242	0.52
4	271	339	0.80
5	1,781	2,958	0.60
6	2,275	2,887	0.79
7	589	1,067	0.55
8	679	834	0.81
9	819	3,632	0.23
10	406	673	0.60
11	678	888	0.76
12	553	725	0.76
13	447	586	0.76
14	1,000	3,382	0.30
15	612	1,594	0.38
16	1,198	1,769	0.68
17	733	1,196	0.61
Total	14,543	26,565	0.55

Table 4 Summary of Road Transport in 1983

Type of Vehicle	Used Vehicle	Traffic Volume	Load/Veh.
Passenger Vehicle	(veh./day)	(passengers/day)	(passengers/veh.)
Car	6,635	17,850	2.69
Matatu Subtotal:	3,946	45,675	11.58
Bus	1,405	43,786	31.16
Subtotal:	11,986	107,311	8.95
Freight Vehicle	(veh./day)	(tonnes/year)	(tonnes/veh.)
Small Size	7,016	1,086,782	0.42
Medium Size	4,879	6,254,811	3.51
Large Size	1,244	4,688,016	10.32
Subtotal:	13,139	12,029,609	2.51
Total	25,125	-	-

Source: Od Traffic Survey (March, 1983)

Table 5 Passenger Transport Characteristics

Vehicle Type	Number of Vehicle Trips per Day	Vehicle km per Day	Average Vehicle Trip Length (km)	Number of Passenger Trips per Day	Passenger km per Day	Average Passenger Trip Length (km)	Average Passengers Carried per Vehicle
Car	6,635 (55)	775,222 (58)	117	17,850 (17)	2,105,810 (17)	118	2.69
Matatu	3,946 (33)	353,776 (27)	90	45,675 (42)	4,156,744 (33)	91	11.58
Bus	1,405 (12)	204,300 (15)	145	43,786 (41)	6,203,495 (50)	142	31.16
Total	11,986	1,333,298	111	107,311	12,466,083	116	8.95

() shows share to the total

Source: 1983 OD Traffic Survey Computed From AADT Traffic Flow

Table 6 Freight Transport Characteristics

Vehicle Type	Number of Vehicle Trips per Day	Vehicle km per Day	Average Vehicle Trip Length (km)	Total Tonnes Transported per Year	Tonnes/km x106 per Year	Transport Distance per Ton (km)	Average Tonnes Carried per Vehicle
Light Goods	7,016 (53)	750,877 (43)	107	1,086,782 (9)	139.4 (5)	128	0.42
Medium Goods	4,879 (37)	607,386 (35)	125	6,254,811 (52)	929.9 (33)	149	3.51
Heavy Goods	1,244 (10)	386,156 (22)	310	4,688,016 (39)	1,755.7 (62)	375	10.32
Total	13,139	1,744,419	133	12,029,609	2,825.0	235	2.51

() shows share to the total

Source: Od survey 1983 Computed From AADT Traffic Flow

**APPENDIX V. LIST OF KENYAN AND JAPANESE GOVERNMENT OFFICIALS
CONCERNED AND STUDY TEAM MEMBERS**

**1. MEMBERS OF THE KENYAN GOVERNMENT WHO ACT AS
COUNTERPARTS AND/OR LIAISON OFFICERS**

Mr. J.K. Kirika	Ministry of Transport and Communications Engineer In Chief
Mr. S. Asfaw	Ministry of Transport and Communications Chief Engineer
Mr. S.M. Kiguru	Ministry of Transport and Communications Chief Engineer
Mr. P.M. Wakori	Ministry of Transport and Communications
Mr. K. Guandai	Ministry of Transport and Communications
Mr. H. Kiragu	Ministry of Transport and Communications
Mr. A.L. Alusa	Ministry of Transport and Communications
Mr. D. Kaura	Ministry of Transport and Communications
Mr. M. Maingi	Ministry of Transport and Communications
Mr. J. Heatt	Ministry of Transport and Communications Roads and Aerodromes Department
Mr. M. Mukwana	Ministry of Transport and Communications Roads and Aerodromes Department
Mr. F.N. Moindi	Ministry of Transport and Communications Design Division
Ms. C.N. Muturi	Ministry of Transport and Communications Planning Division
Mr. G. Wabuke	Ministry of Transport and Communications Roads and Aerodromes Department
Mr. P.M. Parkash	Ministry of Transport and Communications Roads and Aerodromes Department
Mr. R.N. Karimi	Ministry of Transport and Communications Roads and Aerodromes Department
Mr. G.A. Okumu	Ministry of Transport and Communications Roads and Aerodromes Department

Mr. J.P. Ayuga	Ministry of Transport and Communications Directorate of Civil Aviation
Mr. T.G. Orucho	Ministry of Transport and Communications Directorate of Civil Aviation
Mr. B.A. Odera- Ongola	Kenya Ports Authority
Mr. E.G. Njoroge	Ministry of Transport and Communications Meteorological Departments
Mr. G.P. Mbito	Kenya Railways Corporation
Mr. J. Gatua	Kenya Railways Corporation
Mr. J.C. Ochido	Kenya Railways Corporation
Mr. J. Dillenbeck	Kenya Airways Limited
Mr. N.J. Okwemba	Kenya Airways Limited
Mr. F.B.J. Oluta	Kenya Airways Limited
Mr. G.J. Ngondi	Kenya Pipeline Company
Mr. Kabiru	Kenya Pipeline Company
Mr. C.N. Mwangangi	Ministry of Finance and Economic Planning
Mr. I.A. Onyango	Ministry of Finance and Economic Planning
Mr. D.B. Kimutai	Ministry of Finance and Economic Planning
Mr. M.I. Malova	Ministry of Finance and Economic Planning
Mr. S.A.R. Bagha	Ministry of Energy and Regional Development
Mr. A.M. Bereki	Ministry of Agriculture and Livestock Development
Mr. A.M. Getao	Ministry of Agriculture and Livestock Development
Miss M. Watiki	Ministry of Tourism and Wildlife
Mr. F.G. Kago	Registrar of Motor Vehicles

2. MEMBERS OF JAPANESE SUPERVISORY COMMITTEE

Professor	Dr. Y. Matsumoto	University of Tokyo
	Mr. K. Miyota	Ministry of Transport
	Mr. S. Miyanaga	Ministry of Transport
	Mr. S. Uchiyama	Ministry of Construction
	Mr. T. Iijima	Ministry of Construction
	Mr. S. Isoda	Ministry of Transport
	Mr. H. Okuno	Ministry of Construction
	Mr. M. Miyashita	Ministry of Transport
	Mr. S. Fukumoto	Ministry of Transport
	Mr. Y. Suzuki	Ministry of Transport
	Mr. Y. Kitano	Ministry of Transport

3. MEMBERS OF JAPANESE STUDY TEAM

Team Leader	Mr. S. Ikeda	Economics and Management
	Mr. J. Kano	Comprehensive Transport Planning
	Mr. M. Tanimoto	Transport Planning
	Dr. N. Miyatake	Transport Demand Forecasting
	Dr. M. Fukuyama	Road Transport Planning
	Mr. H. Teshima	Economic Planning
	Mr. T. Sasaki	Regional Development Planning
	Dr. Y. Aoki	Transport Investment Planning
	Mr. A. Tani	Financial Analysis
	Dr. N. Sugino	Organisation and Training
	Dr. M. Harada	Railway Planning
	Mr. M. Yamazaki	Railway Facility
	Mr. H. Miyake	Highway Planning
	Mr. K. Kuroki	Highway Design and Maintenance
	Mr. T. Yagyu	Port Planning
	Mr. J. Ohbora	Port Management and Operation
	Mr. O. Horie	Maritime Transport

Mr. K. Shishikura	Maritime Transport and Inland Waterway Transport
Mr. T. Tomishige	Airport Planning
Mr. K. Kosaki	Air Space Planning
Mr. K. Mackita	Air Transport Planning
Mr. K. Motosugi	Pipeline Planning

4. EMBASSY OF JAPAN

Mr. R. Hagio	First Secretary, Nairobi
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5. JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Mr. N. Fukushiro	JICA Headquarters
Mr. K. Notake	JICA Headquarters
Mr. T. Nagashima	JICA Nairobi Office

JICA