

14. Transport Services – Road Infrastructure

14.1 Situational Analysis

Ethiopia’s government was one of the first in Africa to establish a dedicated road agency (1951), the Imperial Highway Authority (later to become the Ethiopian Roads Authority, now the Ethiopian Roads Administration - ERA). The goal of the Authority was to rehabilitate/restore, extend, and maintain the country’s entire road network through its own force account operations. After changes in government and political orientation (in which the remit, name, and oversight of the Authority changed) and following the 1991 shift from a command-based economy to a market-oriented economy, the ERA was re-established. The revision provided strong administration under the leadership of a Board. As part of this reform, the government assigned the administration of rural roads to the regional governments and administration of national roads to ERA as part of the federal government's responsibility. ERA's role in rural roads administration was then limited to rendering support such as overall network planning, training, and technical assistance as required by regional governments.

Road transport accounts for more than 95 per cent of the country’s total domestic passenger and cargo traffic, although the country has a limited road network, a small transport vehicle fleet and a low coverage of road transport services.

Figure 14.1 is a map showing the Federal and Regional Road Network.

Figure 14.1: Federal and Regional Road Network



Source: Road Functional Classification of Existing and Planned New Roads

The total classified road network (2021) of Ethiopia is about 147,942 km. The unclassified road network is estimated to be 49,573 km, meaning that the total road asset is about 197,800 km. **Table 14.1** shows that about 91,600 km of road, which is about 60 per cent of the total classified road network, are minor roads under the regional and woreda road administrations.

Table 14.1: Ethiopian Road Network by Administration, Surface Type and Condition

Administration	Surface Type (km)			Road Condition (%)		
	Gravel	Asphalt	Total	Good	Fair	Poor
ERA (Federal Roads)	12,813	15,886	28,699	22	40	38
RRAs (Regional Roads)	35,806	0	35,806	30	20	50
Community/Woreda (URRAP Roads)	55,808	0	55,808	18	35	47
Municipality Roads	24,416	3,213	27,629	24	30	46
Total	128,843 (87%)	19,099 (13%)	147,942	23	32	45

14.2 Expressway Development

Expressways, which in Ethiopia are tolled, already constructed or under construction are shown in **Table 14.2**.

Table 14.2: Expressways constructed or under construction.

S. No	Road	Road Characteristics					
		Length (km)	Operation	Design Class	No. of Lane	Carriageway width (m)	Design Speed (km/h)
<i>I. Currently Operating</i>							
1	Addis – Adama	78	Toll	Expressway	6	2x (3x3.75)	120
2	Mojo – Batu	90	Toll	Expressway	4	2x (2x3.65)	120
<i>II. Under Construction</i>							
3	Batu – Hawassa		Toll	Expressway	4	2x (2x3.65)	120
4	Adama – Awash		Toll	Expressway	4	2x (2x3.65)	120

Table 14.3 gives the average annual daily traffic (AADT) figures for the Expressways and the Dire Dawa- Dewele Trunk Road by month.

Table 14.3: Average Annual Daily Traffic (AADT) figures for the Expressways by month

S. No	Month	Monthly Total			AADT		
		2020	2021	2022	2020	2021	2022
<i>I. Addis – Adama Expressway Road</i>							
1	Jan	802044	813497	798218	24,505	26,928	29,032
2	Feb	755890	802424	744087			
3	Mar	809919	866817	828151			
4	Apr	765614	786310	767692			
5	May	789828	858692	827562			
6	Jun	759479	825074	-	Percent of Light vehicles = 62%		

S. No	Month	Monthly Total			AADT					
		2020	2021	2022	2020	2021	2022			
7	Jul	580961	826727	833175	Perc. of 2-axle medium bus and small trucks = 18%					
8	Aug	700788	834142	834461						
9	Sep	692357	813341	795831						
10	Oct	765135	845145	814012						
11	Nov	718876	750908	795024						
12	Dec	803462	805809	816412						
II. Mojo – Batu Expressway Road										
1	Jan			112359	-	-	3600			
2	Feb			113078						
3	Mar			123918						
4	Apr			106966						
5	May			115415						
6	Jun			114261	Percent of Light vehicles = 45%					
7	Jul			116180						
8	Aug			104735						
9	Sep			102224						
10	Oct			103546						
11	Nov			97797						
12	Dec			103405	Percentage of 2-axle medium bus and small trucks = 30%					
III. Dire Dawa – Dewele Trunk Road										
1	Jan	30182	30190	40328				1015	1255	1314
2	Feb	29782	29007	40633				Percentage of 3-axle & above medium, heavy & truck trailer = 25%		
3	Mar	30169	31859	43881						
4	Apr	24780	31687	39859						
5	May	31387	33206	41014						
6	Jun	33829	38503	40320						
7	Jul	29336	36305	39912						
8	Aug	31666	45846	47111	Percentage of Light vehicles = 14%					
9	Sep	31143	39109	45907						
10	Oct	35376	46089	43071						
11	Nov	31593	49351	40106						
12	Dec	31137	47092	17609						
								Percentage of 2-axle medium bus and small trucks = 13%		
					Percentage of 3-axle & above medium, heavy & truck trailer = 62%					
					Percentage of three-wheeler = 11%					

14.3 Trunk Road Network

Trunk roads are roads that radiated from Addis Ababa and connect with regional capitals and border points. Trunk roads are usually single carriageway, two lane roads, with design speeds in the range of 50 to 100 km/h. The trunk road network length, traffic volume and riding condition, in terms of road roughness (IRI) are shown in **Table 14.4**.

Table 14.4: Trunk Road Network

No	Trunk Road Corridor	Length (Km)	IRI (Right/Outbound)	IRI (Left/Inbound)	2021 AADT Range (Min – Max)
1	Addis – Galafi Route	679	2.63	2.66	988 – 15,770
2	Awash jun. – Dawalle Route	500	2.53	2.63	928 – 3414
3	Dengego – Togochale Route	198	2.84	2.82	1071 – 2835
4	Ditcheto – Bure (Asseb) Route	142	-	-	-
5	Addis – Zalambsa Route	938	4.11	4.24	892 – 2269
6	Addis – Humera Route	980	2.96	3.03	1865 – 5438
7	Gonder - Metema Route	198	-	-	-
8	Addis – Kurmuk Route	800	3.94	3.85	339 – 6801
9	Addis – Jimma – Jikawo Route	916	5.43	4.14	687 – 5893
10	Modjo – Moyale Route	670	2.75	2.66	635 – 4436

Table 14.5 shows the length, in kilometres, of asphalt and gravel roads by road functional class.

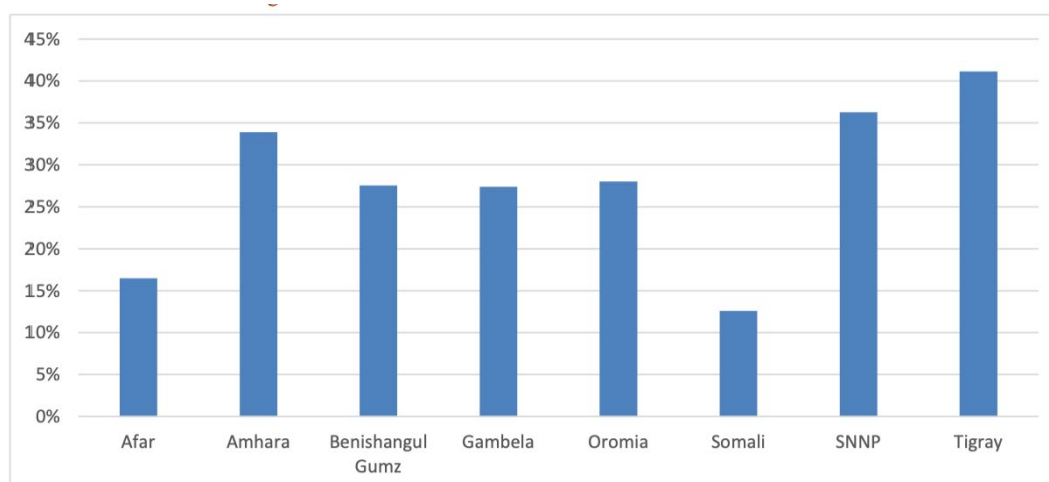
Table 14.5: Asphalt and gravel roads by road functional class.

S. No.	Road Class Id	Road Functional Class	Length (km)		
			Asphalt	Gravel	Total
1	A	Trunk Road	7614	1224	8838
2	B	Link Road	6196	5606	11802
3	C	Main Access Road	1454	3124	4578
4	D	Collector Road	684	1891	2575
5	E	Feeder Road	8	126	134
6	Unclassified Road		421	261	682
Total			16,377	2,231	28,609

In summary, the country's road network has increased from 26,550 km in 1997 to 147,942 km in 2020, so an average growth rate of 8 per cent per year. In addition, the road density per 1000 sq. km has increased from 24.1 km in 1997 to 131 km in 2020. Also, substantial improvement has been registered in the condition of the country's road network, with the proportion of road network in good condition increasing from 22 per cent in 1997 to 71 per cent in 2020.

The population living within 2 km from an all-weather road is 28 million people which gives a Rural Accessibility Index (which is an indication of the percentage of the population living within a 20-minute walk from an all-weather road) of 31 per cent, which is low for sub-Saharan Africa, which has an average RAI of 42 per cent. The RAI for the Somali and Afar Regions of Ethiopia are significantly worse than for the rest of the country as is shown in **Figure 14.2**.

Figure 14.2: Rural Accessibility Index by Region in Ethiopia



Source: National Integrated Transport Master Plan Study

To improve the road network coverage and improve road conditions, the FDRE Government has completed five phases of the Road Sector Development Programme (RSDP), starting in 1997 and completed in 2020. Under the RSDP, physical works have been undertaken on a total of 159,218.4 km of roads excluding routine maintenance work and community roads, financed mainly (84.9 per cent) from domestic sources, including the general budget and the Road Fund Office, but also from external sources (15.1 per cent).

Figure 14.3: Financing Source of the RSDP

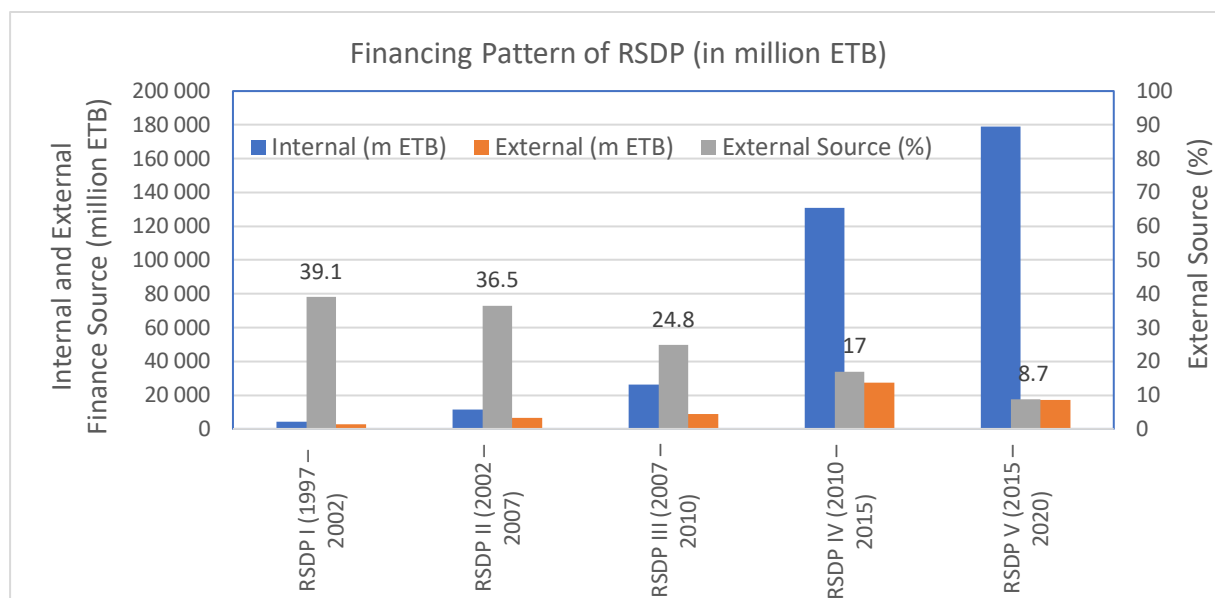


Table 14.6 shows expenditure on road infrastructure by type of road

Table 14.6: Share of road sector expenditure (1997 – 2020)

Expenditure Category	Share of Expenditures (%)
Federal Roads	77.6
- Construction of Expressways	4.5
- Rehabilitation of Trunk Roads	5.7
- Upgrading of Trunk Roads	9.1
- Upgrading of Link Roads	19.3
- Construction of Link Roads	32.2
- Maintenance	4.2
- Others (including Institutional Support)	2.6
Regional Roads	11.5
- Construction	10.2
- Emergency and Routine Maintenance	1.3
Woreda / Community Roads	10.7
Urban Roads (only maintenance)	0.2
Total	100.00

Impressive and positive results have been achieved by the Road Sector Development Programmes but, despite the progress made, average road density and road quality in Ethiopia remain below the average of other African countries, as is shown in **Table 14.7**.

Table 14.7: Road Density and Road Quality Averages

Indicators	World Average	MICs Average	Africa Average	SSA Average	Ethiopia performance
Road Density km per 1000 sq.km	394	335	204	140	131
Road Density km per 1000 people	6.7	7.0	-	3.3	1.4
Road covered with Asphalt (%)	60	57	25	25	13
Roads in good condition (%)	-	82	75	70	23

Note: - MICs: Middle Income Countries; SSA: Sub Sahara Africa