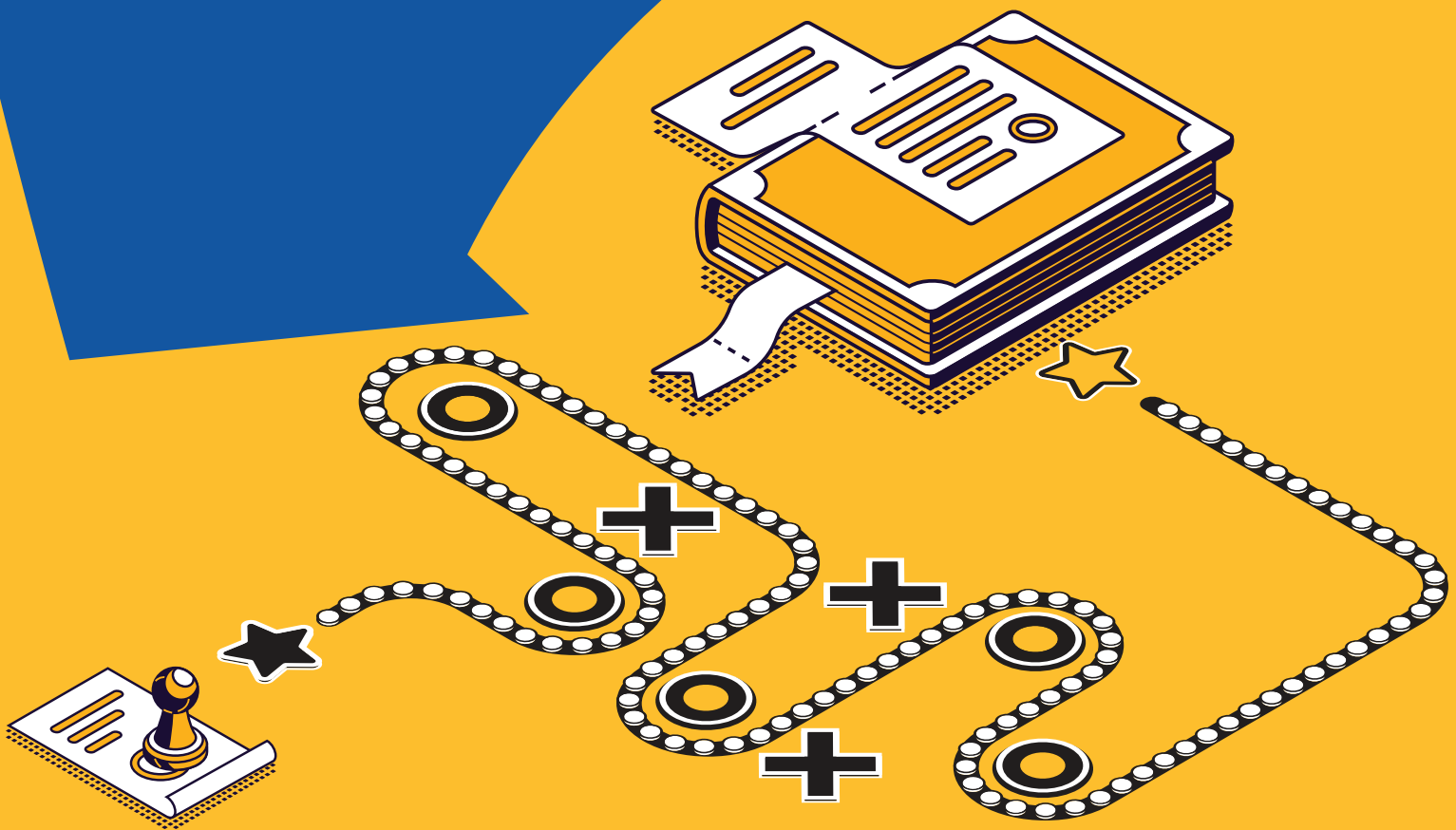


ETHIOPIAN TRANSPORT MASTER PLAN POLICY AND STRATEGY

2022-2052



MESSAGE FROM THE MOTL

Transportation is a major driving force behind the growing world. The role of sustainable transport systems along with universally accessible, quality and resilient infrastructure in building strong economic foundations for all countries is well recognized in the UN Sustainable Development Goals. Agenda 2063 of the African Union also aspires an integrated continent through world class infrastructure and quality transport services across Africa.

Ethiopia, one of the fast growing economies in Africa in the past decades, has envisioned being an African Beacon of Prosperity by 2030. One of the strategic focus areas of the Ethiopian National Development Plan is thus the expansion of quality, accessible and economic transport infrastructure as well as the realization of efficient, safe and reliable services.



Our Ministry, in line with the global overarching sustainable development goals, the continental agenda, and the national vision; has developed the sector policies and strategies. Moreover, based on the international planning framework and the national policies; a 10-years perspective plan of the transport sector was developed and put to implementation; and at present the development of a 30-Years Integrated Transport Master Plan is completed with the coordination of the our Ministry and the active engagement of all stakeholders.

The 30 Years Integrated Transport Master Plan document caters a long-term planning perspective and an integrated approach including other related sub-sectors. It provides technical review of the previous accomplishments in the sector, identifies the gaps, and recommends what should be done for the coming decades by predicting and analyzing the future scenario with core emphasis for integrated development with other economic sectors.

The Master Plan will bring an opportunity for all actors engaged in the sector: government bodies, private sector (contractors, consultants, and service providers), development partners, academia, and the public to get first-hand information on the future trend of the Ethiopia's transport sector and use it as an input for their strategic planning.

The implementation of the Master Plan will be facilitated by our Ministry with active engagement of the private sector. The private sector will obviously be the primary actor in translating the plans into action by deploying the majority of human, financial, material and intellectual resources; and the role of the Ministry is mainly on furnishing favourable regulatory environment and a fair play ground.

As the world continues to grow, develop and change; the transport and logistics sector is in a continuous dynamism. Hence, the Master Plan will be continuously reviewed and updated to accommodate emerging developments.

It is my strong belief that the transport and logistics sector will significantly influence the economic development of Ethiopia favorably for the coming three decades. The Integrated Transport Master Plan will thus be a fundamental guidebook and language of communication with stakeholders and partners for our future endeavors in the sector.

I would like to emphasize that coupled with integrated planning and implementation; our concerted efforts will allow us to put a founding stone for the prosperity of Ethiopia.

Dagmawit Moges

Minister of Transport and Logistics of the Federal Democratic Republic of Ethiopia

TABLE OF CONTENTS

EXECUTIVE SUMMARY	8
1 INTRODUCTION	15
1.1 SCOPE OF THE DOCUMENT	15
2 LANDSCAPE OF THE NATIONAL TRANSPORT STRATEGY	16
2.1 INTRODUCTION	16
2.2 THE EXTERNAL CONDITIONS OF A NATIONAL TRANSPORT STRATEGY	16
2.2.1 <i>International issues and conditions</i>	16
3.1.2. <i>The national policies influencing a national transport strategy</i>	24
2.3 ASSESSMENT OF THE REGULATORY AND LEGAL FRAMEWORK OF THE TRANSPORT SECTOR	29
2.3.1 <i>Assessment</i>	29
2.3.2 <i>The planning framework and the National Transport Policy</i>	61
2.3.3 <i>Main findings, Road sub sector</i>	67
2.3.4 <i>Main findings, Railway's sub sector</i>	70
2.3.5 <i>Main findings, Logistics and Maritime sub sector</i>	71
2.3.6 <i>Main findings, Aviation sub sector</i>	73
2.3.7 <i>Main findings, Inland Waterways sub sector</i>	76
2.3.8 <i>Main findings, Urban Development sub sector</i>	76
2.4 MAIN CRITICAL ISSUES GROUPING THE SECTORAL FINDINGS	77
2.4.1 <i>Governance of the sector</i>	78
2.4.2 <i>Role of the private sector in supporting the transport sector development</i>	80
2.4.3 <i>Transport sector's growth, industrial development and innovation</i>	84
2.4.4 <i>International transport connections</i>	86
3 NATIONAL TRANSPORT STRATEGY AND SECTORAL POLICY NOTES	92
3.1 INTRODUCTION	92
3.2 OUTLINE OF THE ETHIOPIAN TRANSPORT STRATEGY	92
3.3 SECTORAL POLICY NOTES	96
3.3.1 <i>Roads</i>	96
3.3.2 <i>Railways</i>	100
3.3.3 <i>Logistics and Maritime</i>	104
3.3.4 <i>Aviation</i>	107
3.3.5 <i>Inland Waterways</i>	110
3.3.6 <i>Urban and Public Transport</i>	111
3.3.7 <i>Tourism</i>	114
3.4 INSTITUTIONAL CAPACITY BUILDING	124
3.4.1 <i>Introduction</i>	124
3.4.2 <i>Field Assessment of Human Resources in Sectoral Institutions and Enterprises</i>	125
3.4.3 <i>Focus on the training activities</i>	133
3.4.4 <i>Assessment of Federal Transport Institutions</i>	134
3.4.5 <i>Main Findings of the field survey</i>	136
3.4.6 <i>Further findings from desk assessment</i>	136
3.4.7 <i>An analysis of the modalities and the assistance required to implement the investment and policy reform program</i>	138
3.4.8 <i>The creation of a Management System for the Sector Capacity Building: the CBMS</i>	138
3.4.9 <i>The Organization Redesign</i>	139
3.4.10 <i>The scope of work of the new Units</i>	139
3.4.11 <i>The Coordination Procedures</i>	141
3.4.12 <i>Evaluation Methodology</i>	143
3.4.13 <i>The CBMS Implementation Strategy</i>	145
3.5 TRANSPORT INVESTMENTS PRIORITIZATION AND SCHEDULING	145
3.5.1 <i>An overview of the prioritisation within the transport sectors</i>	145
3.5.2 <i>The prioritisation of the major investment programs</i>	152
3.5.3 <i>Sensitivity analysis</i>	161
3.6 INVESTMENT PROJECTS FINANCING	162

3.6.1	<i>Introduction.....</i>	162
3.6.2	<i>Recent experience in PPP and infrastructure Privatization.....</i>	162
3.6.3	<i>FDRE policies for the participation of the Private Sector.....</i>	164
3.6.4	<i>The evaluation of the eligibility for PPP of the major projects.....</i>	167
3.6.5	<i>The evaluation of the eligibility for PPP of the Expressways.....</i>	169
3.6.6	<i>The evaluation of the eligibility for PPP of the Railway lines.....</i>	171
3.6.7	<i>The evaluation of the eligibility for PPP of the Aviation projects.....</i>	174
3.6.8	<i>The evaluation of the eligibility for PPP of the Dry-ports Projects.....</i>	179
3.6.9	<i>Synthesis of the eligibility for PPP of the transport infrastructure Projects.....</i>	182
3.7	PROJECT DELIVERY: SEQUENCING AND CHALLENGES FOR INVESTMENTS AND POLICY MEASURES.....	182
3.7.1	<i>Introduction.....</i>	182
3.7.2	<i>The Masterplan governance.....</i>	182
3.7.3	<i>The investments programs implementation cycle.....</i>	186
3.7.4	<i>The accompanying policies and regulatory measures.....</i>	188
3.7.5	<i>The capacity building activities.....</i>	195
3.7.6	<i>The management of interrelationship.....</i>	195
3.8	TOTAL AMOUNT OF INVESTMENTS AND THEIR SUSTAINABILITY.....	196
3.8.1	<i>The investment projects in each sector.....</i>	196
3.8.2	<i>The total amount of investments and their composition.....</i>	213
3.8.3	<i>The economic sustainability of the ETMP.....</i>	223
3.8.4	<i>The forecasted spending compared to the recent trends.....</i>	226
3.8.5	<i>The ETMP spending compared to the ten Years Plan.....</i>	227

FIGURES

FIGURE 1:	ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF TRANSPORT.....	31
FIGURE 2:	INSTITUTIONS/ENTERPRISES ACCOUNTABLE TO THE MINISTRY OF TRANSPORT.....	31
FIGURE 3:	THE RURAL TRANSPORT TRAP: RATIONALE OF URRAP PROGRAM.....	35
FIGURE 4:	ROAD TRAFFIC ACCIDENTS IN ETHIOPIA 2007-2018.....	39
FIGURE 5:	EVOLUTION OF THE LOGISTICS AND SHIPPING BUSINESS' STRUCTURE.....	44
FIGURE 6:	THE LOGISTICS PROCESSES FOR IMPORT AND EXPORT.....	47
FIGURE 7:	EVOLUTION OF EAL GROUP'S SCOPE OF SERVICES.....	50
FIGURE 8:	ADDIS ABABA ORGANIZATION OF ROADS AUTHORITY (AACRA).....	54
FIGURE 9:	STRUCTURE OF THE DIRE DAWA ROAD AUTHORITY.....	55
FIGURE 10:	POLITICAL AND BUDGETING FLOWS INTERACTIONS.....	58
FIGURE 11:	HORIZONTAL LEVEL OF GOVERNANCE.....	59
FIGURE 12:	THE LOGICAL PLANNING FRAMEWORK OF THE TRANSPORT SECTOR IN ETHIOPIA.....	62
FIGURE 13:	THE STRATEGIC PILLARS OF TRANSPORT POLICY IN ETHIOPIA.....	63
FIGURE 14:	WEAKNESSES OF THE ETHIOPIAN RECENT DEVELOPMENT PATH.....	81
FIGURE 15:	THE THREE DIMENSIONS OF THE TRANSPORT SECTOR'S GROWTH.....	86
FIGURE 16:	COMPARISON OF ETHIOPIA'S INTEGRATION WITH THE COMESA COUNTRIES (AVERAGE).....	88
FIGURE 17:	THE PRESENT AND THE FUTURE MODEL OF INTERVENTION IN THE TRANSPORT SECTOR.....	93
FIGURE 18:	GENERAL AND TRANSPORT PLANNING FRAMEWORK. THE ROLE OF TRANSPORT MASTER PLAN.....	96
FIGURE 19:	INTERNATIONAL TOURISM, NUMBER OF ARRIVALS - ETHIOPIA.....	114
FIGURE 20:	INTERNATIONAL TOURISM, RECEIPTS (CURRENT US\$) – ETHIOPIA.....	115
FIGURE 21:	CHANGE %, INTERNATIONAL TOURISM ARRIVALS.....	117
FIGURE 22:	COMPARISON OF REGIONAL COMPETITORS VS. ETHIOPIA.....	121
FIGURE 23:	LOGICAL POSITION OF THE NEW UNIT IN THE MOTL ORGANOGRAM.....	140
FIGURE 24:	FLOWCHART OF THE PROCESS - PROCEDURE I – PROGRAM DESIGN ENDORSEMENT.....	142
FIGURE 25:	FLOWCHART OF THE PROCESS - PROCEDURE II: QUALITY STANDARDS AND EVALUATION METHODS ISSUING.....	143
FIGURE 26:	DIVERSIFYING PORT ACCESS FOR ETHIOPIA TRADE.....	150
FIGURE 27:	INLAND WATERWAYS: DESIGN SOLUTION MAP.....	152
FIGURE 28:	ETHIOPIA- REFORM COMPLEMENTARITIES IN PROGRAM DESIGN AND SEQUENCING.....	165
FIGURE 29:	AVIATION SERVICES DEVELOPMENT PROJECTS.....	176
FIGURE 30:	DRY PORTS' ROLE WITHIN THE LOGISTICS CHAIN.....	179
FIGURE 31:	CURRENT FREIGHT LOGISTICS SYSTEMS IN ETHIOPIA.....	180
FIGURE 32:	PROCESS OF PLANNING AND IMPLEMENTATION OF PUBLIC INVESTMENTS IN THE TRANSPORT SECTOR.....	184
FIGURE 33:	A POSSIBLE PATH FOR THE SCENARIOS SHIFTING.....	185

FIGURE 34: INFRASTRUCTURE INVESTMENTS IN THE THREE SCENARIOS	213
FIGURE 35: INVESTMENTS IN VEHICLES PERFORMED BY PUBLIC ENTITIES IN THE THREE SCENARIOS	215
FIGURE 36: INVESTMENTS IN VEHICLES PERFORMED BY PRIVATE ENTITIES IN THE THREE SCENARIO	216
FIGURE 37: COMPOSITION OF THE TOTAL INVESTMENTS IN THE THREE SCENARIOS	217
FIGURE 38: PUBLIC AND PRIVATE INVESTMENTS IN THE THREE SCENARIOS	218
FIGURE 39: GDP'S GROWTH PROJECTIONS	223
FIGURE 40: TOTAL TRANSPORT INVESTMENTS IN THE THREE SCENARIOS	224
FIGURE 41: TRANSPORT INVESTMENTS AS PERCENTAGE OF THE GDP IN THE THREE SCENARIOS	224
FIGURE 42: GDP BY MAIN SUB-SECTORS – YEAR 2020	225
FIGURE 43: IMPORTS (2020) AS PERCENTAGES OF TOTAL ETHIOPIAN IMPORTS	226
FIGURE 44: HISTORICAL SPENDING AND PROJECTED SPENDING IN ROAD INFRASTRUCTURES	227
FIGURE 45: CAPITAL EXPENSES IN THE TYP AND IN THE ETMP	228
FIGURE 46: CAPITAL EXPENSES IN THE TYP AND IN THE ETMP AS PERCENTAGE OF THE EXPECTED GDP	228

TABLES

TABLE 1: SDG AND TRANSPORT SYSTEM'S IMPLICATIONS	18
TABLE 2: GENERAL AND SPECIFIC OBJECTIVES OF THE NATIONAL TRANSPORT POLICY	22
TABLE 3: IMPACT OF AfCTA IMPLEMENTATION (PERCENTAGE).....	24
TABLE 4: OUTCOME AND PERFORMANCE TARGETS FROM CRTSS.....	28
TABLE 5: ALLOCATION OF RESPONSIBILITIES ON THE ROAD SUB SECTOR - INFRASTRUCTURE.....	36
TABLE 6: ALLOCATION OF RESPONSIBILITIES ON THE ROAD SUB SECTOR - SERVICES PROVIDING.....	36
TABLE 7: TARIFFS RESPONSIBILITIES FOR THE ROAD TRANSPORT SERVICES	39
TABLE 8: ROAD ACCIDENTS IN ETHIOPIA 2018/19 - 2019/20	39
TABLE 9: ADDIS ABABA TRANSPORT AND PLANNING INSTITUTIONS.....	54
TABLE 10: ADDIS ABABA PUBLIC BUDGET (ETB BILLIONS).....	54
TABLE 11: ANBESSA CITY BUS SERVICE ENTERPRISE MAIN FIGURES	57
TABLE 12: SHEGER MASS TRANSPORT ENTERPRISE MAIN FIGURES	57
TABLE 13: INVESTMENT IN TRANSPORT SECTOR OPENED TO FOREIGN INVESTORS	60
TABLE 14: TYP IMPLEMENTATION STRATEGIES	63
TABLE 15: EAL - TWA AGREEMENTS	75
TABLE 16: STRATEGIC GOALS AND POLICY MEASURES IN THE ROAD SUB-SECTOR	99
TABLE 17: STRATEGIC GOALS AND POLICY MEASURES IN THE RAILWAY SUB-SECTOR	103
TABLE 18: STRATEGIC GOALS AND POLICY MEASURES IN THE LOGISTICS AND MARITIME SUB-SECTOR	106
TABLE 19: STRATEGIC GOALS AND POLICY MEASURES IN THE AVIATION SUB-SECTOR	109
TABLE 20: STRATEGIC GOALS AND POLICY MEASURES IN THE INLAND WATERWAYS SUB-SECTOR	111
TABLE 21: STRATEGIC GOALS AND POLICY MEASURES IN THE URBAN DEVELOPMENT/PUBLIC TRANSPORT SUB-SECTOR.....	113
TABLE 22: INTERNATIONAL TOURISM ARRIVALS AND RECEIPTS (US\$ MILLION) – ETHIOPIA	115
TABLE 23: INTERNATIONAL TOURISM ARRIVALS.....	116
TABLE 24: FEDERAL TRANSPORT INSTITUTIONS HUMAN RESOURCE BY LEVEL OF EDUCATION.....	126
TABLE 25: FEDERAL TRANSPORT INSTITUTIONS BY GENDER.....	126
TABLE 26: FEDERAL TRANSPORT INSTITUTIONS BY EDUCATION AND GENDER.....	126
TABLE 27: MoTL NUMBER OF STAFF BY DIRECTORATE AND VACANT POSITIONS.....	127
TABLE 28: ERA HUMAN RESOURCE BY DIRECTORATE.....	127
TABLE 29: ECAA HUMAN RESOURCE BY DIRECTORATE AND VACANT POSITIONS*	129
TABLE 30: RFO HR BY DIRECTORATE AND VACANT POSITIONS.....	129
TABLE 31: IFAA NUMBER OF EXISTING STAFF AND VACANT POSITIONS BY DEPARTMENT/DIRECTORATE	129
TABLE 32: IFAA NUMBER OF EXISTING STAFF AND VACANT POSITIONS BY DEPARTMENT/BRANCH OFFICES.....	130
TABLE 33: ESLSE EMPLOYEES BY DIRECTORATE/BRANCHES	130
TABLE 34: ERC NUMBER OF EXISTING STAFF AND VACANT POSITIONS BY DEPARTMENT/DIRECTORATE.....	131
TABLE 35: EDR NUMBER OF EXISTING STAFF AND VACANT POSITIONS BY DEPARTMENT/DIRECTORATE.....	131
TABLE 36: EAL NUMBER OF EXISTING STAFF AND VACANT POSITIONS BY DEPARTMENT/DIRECTORATE	131
TABLE 37: PSETSE NUMBER OF STAFF AND VACANT POSITION BY DEPARTMENT/DIRECTORATE.....	132
TABLE 38: NUMBER OF STAFF BY AGE DISTRIBUTION	132
TABLE 39: NUMBER OF STAFF BY PROFESSION IN EACH INSTITUTION	133
TABLE 40: SHORT & LONG TERM TRAINING PROVIDED FOR THE STAFF FOR 3 YEARS (2017 – 2019).....	133
TABLE 41: CAPACITY PLAN EXECUTED (2017-2019).....	134
TABLE 42: CAPACITY BUILDING PROJECT PLANNED	134

TABLE 43: FEDERAL TRANSPORT INSTITUTIONS 7S ORGANIZATIONAL ASSESSMENT.....	134
TABLE 44: KEY PERFORMANCE INDICATORS FOR CB PROGRAMS	144
TABLE 45: GO AHEAD ROAD NETWORK PROJECTS.....	146
TABLE 46: HDM4 RESULTS	146
TABLE 47: RAILWAY INVESTMENTS RANK.....	147
TABLE 48: LIST OF ACTIONS IN AVIATION SECTOR.....	148
TABLE 49: LIST OF" LINEAR INFRASTRUCTURES" INVESTMENT PRIORITISED WITH THE MCA ANALYSIS.....	153
TABLE 50: THE PERFORMANCE MATRIX DIMENSIONS.....	155
TABLE 51: PERFORMANCE MATRIX CALCULATED	156
TABLE 52: RANKING PER PERIOD.....	157
TABLE 53: OVERALL RANKING	158
TABLE 54: LIST OF" PUNCTUAL INFRASTRUCTURES" INVESTMENT PRIORITISED WITH THE MCA ANALYSIS	159
TABLE 55: PERFORMANCE MATRIX CALCULATED	159
TABLE 56: RANKING PER PERIOD.....	160
TABLE 57: OVERALL RANKING	160
TABLE 58: RESULTS OF THE SENSITIVITY ANALYSIS.....	161
TABLE 59: INVESTMENT IN INFRASTRUCTURE PROJECTS WITH PRIVATE PARTICIPATION IN DEVELOPING COUNTRIES	164
TABLE 60: LONG TERM COUNTRY EQUITY RISK PREMIUM AND COUNTRY RISK PREMIUM FOR ETHIOPIA.....	169
TABLE 61: FINANCIAL INTERNAL RATE OF RETURN FOR MAJOR EXPRESSWAYS	170
TABLE 62: FINANCIAL INTERNAL RATE OF RETURN FOR MAJOR EXPRESSWAYS: RAISED TARIFFS/SUBSIDY GRANTED CASE	170
TABLE 63: FINANCIAL INTERNAL RATE OF RETURN FOR THE RAILWAY LINES	171
TABLE 64: FINANCIAL INTERNAL RATE OF RETURN IN CASE OF" CLASSIC CONCESSION"	172
TABLE 65: FINANCIAL INTERNAL RATE OF RETURN FOR THE "RAILWAY UNDERTAKING"	173
TABLE 66: FINANCIAL INTERNAL RATE OF RETURN OF SELECTED AIRPORTS	179
TABLE 67: MAIN FIGURES OF DRY PORT EVALUATION	181
TABLE 68: FINANCIAL INTERNAL RATE OF RETURN OF SELECTED DRY-PORTS.....	181
TABLE 69: SYNTHESIS OF THE PROJECTS ELIGIBLE TO BE FINANCED VIA PPP	182
TABLE 70: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES - ROADS	188
TABLE 71: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES – RAILWAYS	189
TABLE 72: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES - LOGISTICS AND MARITIME	191
TABLE 73: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES – AVIATION	193
TABLE 74: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES - INLAND WATERWAYS.....	194
TABLE 75: STRATEGIC GOALS, OBJECTIVES AND POLICY MEASURES - URBAN AND PUBLIC TRANSPORT.....	194
TABLE 76: INVESTMENTS IN THE ROAD SECTOR IN THE THREE SCENARIOS	197
TABLE 77: INVESTMENTS IN THE RURAL ROADS IN THE THREE SCENARIOS	200
TABLE 78: INVESTMENTS IN THE LOGISTIC SECTOR IN THE THREE SCENARIOS	202
TABLE 79: INVESTMENTS IN THE RAILWAYS SECTOR IN THE THREE SCENARIOS	204
TABLE 80: INVESTMENTS IN THE AVIATION SECTOR IN THE THREE SCENARIOS	206
TABLE 81: INVESTMENTS IN THE INLAND WATER TRANSPORT SECTOR IN THE THREE SCENARIOS	210
TABLE 82: INVESTMENTS IN THE URBAN SECTOR IN THE THREE SCENARIOS	212
TABLE 83: INFRASTRUCTURE INVESTMENTS FROM THE DIFFERENT SECTORS IN THE THREE SCENARIOS.....	220
TABLE 84: PUBLIC INVESTMENTS IN VEHICLES FROM THE DIFFERENT SECTORS IN THE THREE SCENARIOS	221
TABLE 85: PRIVATE INVESTMENTS IN VEHICLES FROM THE DIFFERENT SECTORS IN THE THREE SCENARIOS	222

ACRONYMS

Abbreviations	Meaning	Abbreviations	Meaning
AA LRT	Addis Ababa Light Rail Transit	FDRE	Federal Democratic Republic of Ethiopia
AACMP	Addis Ababa City Master Plan	FOB	Free on Board
AACRTB	Addis Ababa City Road and Transport Bureau	FTA	Federal Transport Authority
ACTKs	available cargo tonne-kilometres	FTM	Future Transport Model
ADLI	Agricultural Development Led Industrialization	FYP	Five-Year Plan (MoT)
ADPI	Aéroport de Paris International	FUPI	Federal Urban Planning Institute
AfCFTA	African Continental Free Trade Area		
AfDB	African Development Bank	FX	Foreign exchange
AIM	Aeronautical Information Management	FYP	Five-Years Development
AIS	Aeronautical Information Service	GDP	Gross Domestic Product
BAU	Business-as-usual	GHG	greenhouse gas
BRT	Bus Rapid Transit	GOE	Government of Ethiopia
CA	Current Account	GRSP	Global Road Safety Partnership
CAA	Civil Aviation Authority	GTP	Growth and Transformation Plan
CAGR	Cumulated Average Growth Rate	HGER	Homegrown Economic Reform Programme
CBA	Cost-Benefits Analysis	IATA	International Air Transport Association
CBDS	Capacity- Building for Decentralized Service Delivery)	ICAO	International Civil Aviation Organization
CDE	Chemin de Fer Djibouti-Ethiopian	ICT	Information and communication technology
CoM	Council of Ministers	IHPD	Integrated Housing Development Program
COMESA	Common Market for Eastern and Southern Africa	IMF	International Monetary Fund
CRGE	Climate Resilient Green Economy	IMS	Integrated Management System
CSA	Central Statistical Agency of Ethiopia	ISPS	international Ship and Port Facility
CTKs	cargo tonne-kilometres	ISS Report	Inception and Sector Situation Analysis Report
EEAIB	Ethiopian Aircraft Accident Investigation Bureau	IUCN	International Union for the Conservation of Nature
EAC	East African Community	IUDP	Integrated Urban Development Plan
EAE	Ethiopian Airports Enterprise	JESH	Jiggiga Export Slaughterhouse
EAG	Ethiopian Airlines Group	LAC	Latin America and the Caribbean
EAL	Ethiopian Airlines	LAPSSET	Lamu Port, South Sudan, Ethiopia Transport Corridor
EA-SA	East and Southern African	LIC	Low Income Countries
EBM	Expenditure Budgeting Model	LRT	Light Rail Transit
ECA	Europe and Central Asia	MCA	Multi-Criteria Analysis
ECAA	Ethiopian Civil Aviation Authority	MCBRTA	Multilateral Cross-Border Road Transport Agreement
ECARAS	Ethiopian Civil Aviation Authority Rules And Standards	MDGs	Millennium Development Goals
ECWC	Ethiopian Construction Works Corporation	METEC	Metals and Engineering Corporation)
EDR	Ethio-Djibouti Railways	MMT	Ethiopian Maritime and Transit Services Enterprise
EMA	Ethiopian Maritime Authority	MoF	Ministry of Finance
EMDE	Emerging Markets and Developing Economies	MOFEC	Ministry of Finance and Economic Cooperation
EMTI	Ethiopian Maritime Training Institute	MoTL	Ministry of Transport and Logistics
ENUUDP	Ethiopian National Urban Policy	MRO	Maintenance, Repair Operation
EPE	Environmental Policy of Ethiopia	MUDHCo	Ministry of Urban Development and Housing)

ERA	Ethiopian Road Authority	NDCs	Nationally determined contributions
ERC	Ethiopian Railway Corporation	NDP	Neighbourhood Development Plan
ERTTP	Ethiopian Rural Travel and Transport Programme	NGO	Non – Governmental Organisation
ESL	Ethiopian Shipping Line	NITMP	National Integrated Transport Master Plan
ESLSE	Ethiopian Shipping and Logistic Service Enterprise	NRSP	National Road Safety Policy
ETB	Ethiopian Birr	NRTSC	National Road Safety Council
ETMP	Ethiopia Transport Master Plan	NTS	National Transport Policy
ETRE	Ethiopian Toll Roads Enterprise	NUDSP	National Urban Development Spatial Plan
EU	European Union to Ethiopia	NUPI	National Urban Planning Institute
eWTP	electronic world trade platform	NVOCC	Non-Vessel Operating Common Carrier
FDI.	Foreign Direct investment	O/D	Origin/Destination

EXECUTIVE SUMMARY

The transport sector guarantees the country the opportunity to carry out economic activity, the mobility of goods and citizens, access to studies and health centers, the citizens' possibility of developing their working career and their talent. But at the same time the transport sector is also an opportunity for development in itself, as a sector that solicits manufacturing and service delivery activities, creating job opportunities for citizens. This double nature of the sector is one of the main keys of the thirty-year Masterplan.

As part of the Masterplan, this National Transport Strategy updates and enhances guideline documents previously issued, taking into account the main findings of the assessment carried out for all subsectors and the results of the transport model in terms of future demand and investments necessary to cope with it.

The National Transport Strategy must be framed within the reference landscape of the external conditions influencing the Ethiopian transport sector. These conditions are both international and domestic and have to be considered as exogenous variables for the setting of the transport strategy.

Beyond the macroeconomic variables, which were used for the definition of the scenarios and for the forecasts of the transport model, the main exogenous conditions at international level are the UN Agenda for Sustainable Development Goals and the scenario outlined by the AU in the Africa Agenda 2063. These references, are the two pillars for the definition of the National Transport Strategy. In fact, although they cannot be considered equal from the point of view of contents, there is no doubt that there is a strong convergence on many concepts developed in both documents.

SDGs have been progressively embedded within the FDRE's national planning process since 2015. The Ethiopian Ten-Year Development Plan 2021-2030 (A pathway to prosperity) states that "the commitment of Ethiopia to the United Nations 2030 Agenda for Sustainable Development is vital in terms of ensuring people-centred development goals." The country made an effort to integrate most SDG goals and targets with the national development vision and Ethiopia's domestic characteristics, providing a specific alignment scheme.

Sharing the vision of SDG means outlining a harmonious development path of the country's human and natural resources, making economic progress and protection of the natural environment compatible. In the transport sector this means combining a strong growth in the offer of infrastructure and services through design, organizational and technological solutions capable of minimizing the impact on the consumption of territory and natural resources.

Although Agenda 2063 is a more directly political document than SDGs, the contact points are clearly evident and the repercussions for the transport sector are equally explicit. Since the milestone of Agenda 2063 is a significant economic and commercial integration of the African continent, the role of national transport systems and their growing interconnection at gradually lower costs becomes crucial. It is no coincidence, in fact, that the transport sector is one of the first areas of implementation of the African Continental Free Trade Area (AfCTA).

Sustainability and continental integration are the fundamental keywords of the future international scenario and which necessarily influence the internal conditions of the country. In order to cope with these international challenges and to confirm a robust development path, Ethiopia has to intervene on the side effects of its rapid growth of the last decades. This is the aim of the homegrown economic reform (HGER), which is strongly focused on the enhancement of productivity and competitiveness of the overall economy, and a gradual transition from public to private sector-led growth. The main objective of the HGER is to valorize the huge investments of the past decades by mobilizing both capital and managerial knowledge of private operators, thus encouraging the public enterprises to undertake a path to economic efficiency.

The country's Ten-Year Development Plan (A pathway to prosperity) is centred on the HGER, which in turn includes macroeconomic reforms, sectoral reforms, and structural reforms. The understanding of the impact of these exogenous factors on the transport sector has been embedded in the main findings of the assessment of the status of the sector itself which is the starting point of the National Transport Strategy. The comprehension of the sectoral critical gaps has been carried out for each subsector, also encompassing horizontal and local issues.

A significant gap highlighted by the analysis concerns the lack of physical infrastructures, especially in connection with the strong increase in demand for transport services that the forecasts have identified in the coming decades. The gap certainly concerns the federal and local road networks but also the railway one, as well as specific transport hubs such as dry ports and ports. The domestic airport network and the first development of inland waterways also constitute mobility alternatives that should integrate the future national transport system. But alongside the physical infrastructures, the other side of the shortage is represented by the vehicle fleet which will make the mobility flows effective.

A considerable strengthening of the transport capacity is the most obvious effort to undertake, but a more hidden gap must be mentioned. The lack was identified both in the Home-Grown Economic Reform and in the Ten Years Development Plan 2021-2030 and concerns the ability of the sector to enhance the enormous public investments made in road and railway networks. This lack is related with a low increase in the productivity of the national economy and this, in turn, is much more linked to financial, technological and managerial skills rather than a simple scarcity of transport capacity (infrastructures and vehicles).

Given this clear-thinking diagnosis, the transport sector has to face four critical issues summarizing the specific sub-sectoral gaps.

The first issue is that concerning the role of private operators in the transport sector. Until now the role of private operators has been ancillary to public action. The Home-Grown Economic Reform states that it will be essential not only to bridge the gap of financial resources needed for future investments, but also to increase the productivity of the investments made during the past years: railways, roads, dry ports, airports.

The financial effort required to deal with the challenge of future mobility needs is too large to be left entirely on the country's public budget. But financial criticality is not the only reason to collect private efforts, foreign and domestic. The growth of Ethiopia now requires that the country changes the way of public intervention in the sector, giving space to private entrepreneurship in order to allow the public sector to gradually focus on planning and regulation of the sector.

The second issue concerns the role of the transport sector as a growth factor. Though Ethiopia's manufacturing development has been led by a strategy of industrialization led by

an import-substitution approach, the industries of infrastructure machinery/vehicles and automotive, appears currently unable to act as a real alternative supply channel.

These industries seem not to belong to the sectors with high priority and the Ethiopian Industrialization Agenda seems to think about transport only as a logistics tool, while omits to consider the second face of this sector: an opportunity to satisfy the growth of the domestic demand. This opportunity is not limited to the manufacturing side of the sector but also embraces the supply of services, which are strongly characterised by technical and business innovations.

In addition, the opportunity to develop the transport industry should also be related to the continental positioning of Ethiopia in view of the progressive continental integration, supporting the path of a growing role of the country as a producer for Africa.

This path is the third issue to consider: Ethiopia should have a strong international projection due to its nature and ambition in the African continent. The country is already the African leader in the aviation sector, but its status of landlocked country is a structural weakness that must be carefully managed and overcome. To this end, the transport sector will be the test bench of the future integration processes which will take place in the future decades.

To address the challenges mentioned above, the transport sector must have the capabilities to understand them and provide solutions. However, the success of establishing a central administrative level is currently hampered by large gaps at the level of regional states or local administrations. The successes achieved at the center in the leadership and management capacity of public bodies are far from being achieved at the local level. One of the findings of the assessment is that there is a risk of a serious divide between the two levels of governance, Federal and local, in the ability to implement general or sectoral objectives.

Understand the gaps is the first step to overcome them. As mentioned above, the sectoral and horizontal issues assessed can be summarised in physical gaps and critical issues.

The physical gaps need an important effort in terms of investments, in order to create the transport capacity requested by the future transport demand. These investments should be considered in their different components:

- Infrastructure investments, the one that are

a mix of concrete and technologies, and are bound to a specific territory and allow, with public access, transport services to be developed on them.

- Vehicles to be invested by public entities;
- Vehicles to be invested by private entities.

The investments from the public party are the sum of infrastructure investments and investment in vehicles from the public entities. A part of them can be participated by private capitals through PPP schemes.

In order to cope with the long timescale covered by the Masterplan, three scenarios have been sketched, framing the investments within different hypothetical landscape of development. The base scenario (Go Ahead) is featured by the continuity with the policies and the planning expressed by the Government of Ethiopia in recent times. The Next Generation scenario has the same international conditions of the base scenario, with a strong willingness by Ethiopia Government to assume the innovation leadership of the Continent by introducing zero-emissions vehicles at an earlier stage by a comprehensive plan of investments and incentives. The Limits to Growth scenario, could materialize if the economic effect of the pandemic will be much worse than the ones assumed in the previous ones and can be considered as a contingency scenario.

The total amount of infrastructure investments for the thirty years period in the base scenario (Go-Ahead) reaches the level of 75,5 Billion USD. The Investments in Vehicles by the Public party totalize 14,4 Billion USD, while the investments in vehicles expected by the privates to satisfy the transport demand expected arrives to the very relevant amount of 322,7 USD Billion.

As these figures clearly show, most part of the plan implementation is done by the privates, who will invest the 78% of the total resources. This will require that the regulatory conditions in each transport sector create the right confidence climate in the long-term perspective.

The total investment figures of the investments in the Next Generation scenario are near to the ones of the base scenario, but their composition is quite different, having more road investments and less railways investments. The third scenario, Limits-to-Growth, is the one who envisages macro-economic conditions less favourable, and consequently the public investments are limited

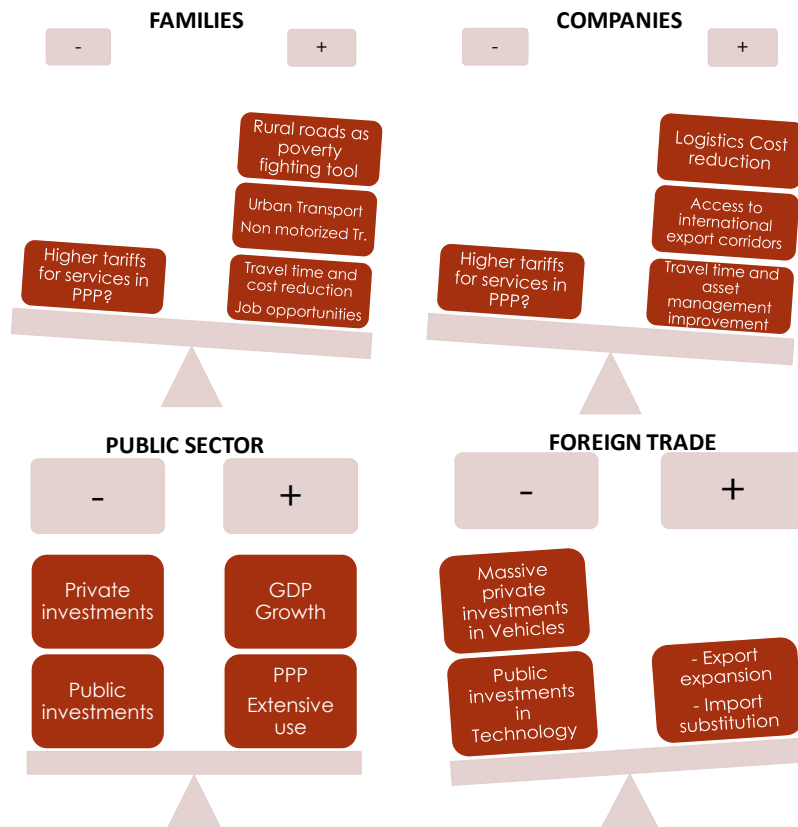
to a total amount of 52,8 USD Billions (-41% of the public investments in the base scenario).

The sustainability of the Investments Plan can be evaluated with reference to the impact to the four basic balance sheets of the economy: Families, Companies, Public Sector, Foreign Trade.

The balance sheet of the families is positive: the Rural roads network enhancement will be a powerful tool for the poverty fighting; in the urban areas the starting of the public service in 70 urban areas exceeding 50 thousand inhabitants, together with the implementation of the non-motorized strategy, will contribute significantly to the quality of life. The new transport services will bring reduced travel time and costs, increasing the consumers rent. Finally, the investment program and the transport sector development will bring relevant job opportunities to the Ethiopian families. On the other hand, some cost increase for the services can derive from a higher level of tariffs induced by an extensive use of the PPP.

The balance sheet of the companies is even more positive: the most important outcome will be a reduction of the logistics costs, that is an historical point of weakness for the Ethiopian enterprises in the global competition. Further advantages will be to have better access to the international corridors in the framework of the African common trade area, with the related growth opportunities. For the transport companies a better infrastructure means reduced maintenance costs for the vehicles and a reduced cycle time, with a better use of the assets. Also for the companies, some negative effect can come from higher tariffs induced by the PPP schemes. On the other hand, these schemes also constitute investment opportunities for the private Companies.

The impact of the Transport plan on the balance sheet of the public sector appears to be sustainable: the public investments will have an incidence on GDP that is reduced from the ones of the past decade, with a peak in the period 2025-2035 (1,85% of the GDP) and a reduction in the following fifteen years up to a percentage of 0,8% of the GDP. The private investments are expected to boost the aggregate demand in partial substitution to the public ones. The contribution of the PPP to the funding can be significant too, if the regulatory conditions will be in place.



The impact of the Transport plan on the balance sheet of the Foreign Trade will be the problematic aspect of the sustainability of the Transport Plan Investments. Already in the current situation the transport vehicles have an incidence on the total imports of Ethiopia superior to the 10%, well higher than the percentage of the sector in terms of GDP. The private sector vehicles investments are expected to boom, particularly in the period 2035-2050. This will be due mainly to road freight vehicles, but also to private cars and buses.

The issue should be approached from two different sides:

- the export expansion, awaited since several years, should finally materialize. This would help to rebalance the burden that the transport sector risks putting on the international payments;
- On the other side, it is of the utmost importance the acceleration of the Government Programs to create an automotive national industry, already started with alliances with global players to build assembling automotive factories in Ethiopia. The goal should be to devote the investments in new vehicles mainly on national products, with a more limited impact on the FX constrain.

The success of an “import substitution Policy” in the vehicles industries, particularly for the freight vehicles, is a vital element for the economic sustainability of the plan.

In recent years the FDRE Government has paved the ground for an effective Public-Private-Participation policy. Based on this regulatory framework, the eligibility of all the major investments for a PPP scheme has been explored and the results are promising if the further regulatory arrangements will be shaped accordingly.

Out of the 16 new expressways envisaged in the plan, six can be eligible, if the revenues expected can be increased by 65% (by mixing a 30% of tariff increase and a 35% of current grant to the private investors). This framework allows investments in Expressways by the privates for a total of 5,2 USD Billion.

In the case of the new railways line, the PPP scheme is applicable in case of the liberalization of the service in regime of open access. Under these circumstances the public party could limit the investment to the infrastructure construction, while the needed rolling stock can be an investment of the private railway undertakings, with a saving of the public budget up to 3,3 Billion USD.

The PPP scheme can be applied also to “punctual infrastructures”, like dry-ports and national airports.

Six new dry-ports and six national airports upgrading can be easily financed by PPP, with a cumulative saving for the public budget of 0,9 billion USD.

Physical gaps should be filled by a well-planned investment plan, aiming at improve both infrastructures and vehicles. At the same time, the strategy to enable the Ethiopian transport sector to meet the challenges of the coming decades should pursue the following main objectives:

- improve services in a sustainable way,
- change the model of public intervention,
- improve the sector's capabilities,
- exploit the industrial side of the sector,
- prepare Ethiopia for the continental integration.

The growth of transport demand in Ethiopia in the next decades calls for more transport capacity (infrastructure, vehicles and services). The ability of the sector to supply new capacity and higher services, both in quantity and quality, will be the main challenge to be faced.

Ethiopia has decided to adopt the SDG principles, this has meant incorporating the concept of sustainability within the transport sector, which also has negative impacts on the life and health of citizens. The strong increase in transport capacity that the country needs to grow should be achieved by adopting solutions that avoid or limit negative impacts. For this reason, the issue of safety has become crucial in measuring how the transport sector is able to meet the quantitative and qualitative levels of transport demand in a sustainable way.

Great focus to both impact of transport and mobility growth are challenges for the future development of the country. Real opportunities can be seized if Ethiopia will drive its internal market towards sustainable technological and organizational solutions.

In order to be able to design and lead a sustainable growth of transport demand, transport sector institutions should develop new skills, shifting from pure administration to planning of services, ensuring a minimum level of service providing and customising it according with the different regional situations.

As suggested by the HGER, one of the main duty of the public powers is to design and fine-tune the rules of engagement to make possible a stable and conducive participation of private

companies in the economic life of the country. In the transport sector this means to fill the gaps of the sectoral regulatory frameworks by introducing the third-party principles to regulate safety issues and economic relationships and, more widely, to move towards a more competition-oriented environment.

In the long term the focus must shift from direct provision of services to the creation of suitable conditions for a coexistence of both private and public operators, acting on a level playing field. Service obligations, Tariff obligations and Compensation schemes has to be introduced to ensure public services. In the long term the duty of satisfying the growing demand has to be progressively shifted to the private sector, defining conditions and rules to ensure that its initiative will be also directed towards purposes of public interest.

To change the model of intervention in the transport sector a serious improvement of technical and managerial capabilities, both for institutions and private companies, is requested.

Transport institutions will have to facilitate private sector initiatives and will have to do so in a varied situation where there are still many gaps to be filled, especially at the local level.

To this purpose a twofold strategy has to be developed and implemented. The country has to undertake efforts both to build and consolidate the basic skills at local level and reinforce the weaker institutions at national level. At the same time, a new set of skills must be built to manage the future development scenario which is by far different from the past, because requests public and private companies to operate at the same level.

The first leg request to operate to build/consolidate the basic skills at local level, focusing interventions on Regional States' authorities (both RRAs and Regional Transport Bureaus). At the same time the ability of the weaker institutions at national level must be reinforced. The second leg is to prepare a new set of skills able to manage the dynamics of privatisation/liberalisation process, including the task of reviewing the mission of public enterprises and their organizational structure.

In transport, the private sector must evolve in its role, from ancillary to protagonist, raising its managerial culture and the qualification of human capital. The recruitment of qualified young people from universities to be included in companies is fundamental, as is the contribution of foreign investors.

The transport sector is not only aimed at satisfying mobility needs but also at contributing to the industrial and economic development of the country. Currently, the imbalance between domestic supply and demand is now a critical factor: lack of spare parts, vehicles, equipment and, consequently, of foreign exchange.

This imbalance must be remedied by making use of the development dynamics of internal demand in the transport sector. The country's industrialization agenda should focus on the great development opportunities of the transport sector, not only in manufacturing but also in the provision of services, since these latter activities have a great potential for innovation, both technical and organizational.

The captive demand basin can be directed towards a production system on a national basis, through a program for the development of manufacturing and service initiatives that aims to satisfy gradually increasing shares of the sector's needs.

In a long-term vision this path will reinforce the role of the country in the continental scenario, marked by a progressive trade integration.

AfCTA gives a priority to transport sector in its implementation process. Non-tariff barriers for land connections need to be reduced, the results of regional cooperation have to be embedded in the process. Road sub-sector has to harmonise its technical and administrative constraints in order to smooth operation at borders. Railways has to define its technical and procedural standards assuming the view of interoperability. In the long term, interoperability at land borders is a must of the agenda of African integration.

The AfCTA implementation process must safeguard the country's competitive advantages wherever possible. The international competitive positioning in the aviation sub-sector must be developed hand in hand with the opening of the domestic market.

The country must continue to focus its effort on a port diversification strategy and improve the economic integration with neighbouring countries, playing a pivotal role. In fact, international land connections will play a relevant role in the development of Ethiopian trade flows, the logistics sector has to be prepared to improve its performance to make internal corridors competitive on a continental scale.

Eventually, AfCTA will be a great opportunity to gain access to a potential market of continental dimension. The transport related industries, having defined their domestic growth path, will

be able to capitalize the domestic market opportunities to be prepared to the progressive trade barriers decrease.

Finally, Ethiopia's transport strategy must tackle the implementation phase of the Masterplan which needs to underline some key concepts: i) Governance of the Masterplan, ii) Investments cycle, iii) Coordination between investments and regulatory streaming, iv) Capacity building.

The institutions in charge of the ETMP and those involved in the process should be aware that a good governance of the Masterplan is fundamental for its correct implementation. The planning framework, with its internal consistencies, coordinated phases and continuous monitoring, should be followed without omitting steps or activities. In fact, it has to be underlined that the best international practices clearly indicate that the "quality jump" in transport planning is the switch from the occasional logic to the systematic process, in which the Masterplan is periodically updated, and the transport model behind the Masterplan is timely updated of the input data and generates new projections, that are at the basis of the updating of the planning of new infrastructures and of the investment priority list.

A similar suggestion is all the more useful the longer the period covered by the Masterplan and the scenario full of uncertainties. To this purpose it is recommended to monitor the factors underlying the different forecast scenarios provided for the investment plan, in order to be able to catch the signals indicating the opportunity to switch from one scenario to another.

Based on the consistency of the planning process, the main implementation actions of the ETMP concerns physical infrastructures, the policy measures and the improvement of the human capital. To this end, particular attention should be paid to the investment cycle. Feasibility studies play a vital role in transforming what is planned on paper into something that is actually achievable. All components of this fundamental tool, from technical standards definition to traffic study, from alignment definition to business case and cost-benefit analysis, must be accurately carried out.

Besides this analysis a strict third-party approach should be followed, separating detailed design from construction phase. It is furthermore crucial to avoid unbalances between supervision and construction activities, through the separation of the two activities.

Eventually, given the macroeconomic framework underlying the international positioning of the country, a particular attention should be paid on the impact of new investments on foreign currency needs. This issue has two sides: the impact of FX for the construction of the new infrastructures and the impact deriving from the private investments required for the use of that infrastructures. Both sides call for an active agenda of prioritisation for the manufacturing sector linked to the transport sector.

Realization of new transport capacity and regulatory streaming are not independent but need to be coordinated. Policies implementation and measures' establishment take time just as infrastructures building does. Given the variety of regulatory issues to be implemented in the different sub sectors, the sub-sectoral plans should set the due coordination between the two legs of the public intervention, also embracing the review of the objectives fixed to State Owned Enterprises in each sub sector.

The provision of new and integrated physical transport capacity and the adoption of the policy accompanying measures cannot be reached without a substantial/important/relevant increase of the sectoral capabilities, particularly those of the public sector, which is requested to lead and implement the ETMP.

Capacity building is a crucial issue to allow the institutions to be able to realize the actions included in the Masterplan. In this field what is needed is a shift in the approach: from administration to coordination. While is correct to continue to apply a bottom-up philosophy, with an effort provided by the Authorities and Companies that have implementation role, at the same time the role of MOTL will have to evolve to supervisor and standards setter of the initiatives in that field. To this end it has been designed a specific Capacity Building Management System to the benefit of the MOTL.

Finally, the planning and implementation effort will require a general coordination staff that will have the delicate role to harmonize the four streams of the implementation above described.

For this reason, in the MOTL structure redesign, that is ongoing after the recent Proclamation about the roles and responsibilities of the Ministries of FDRE, it is crucial to strengthen the Planning and Monitoring functions. The quality and intensity of the coordination between the latter and the corresponding structures in the Authorities, Administrations and State-Owned Enterprises involved in the National Masterplan implementation, together with the spirit of cooperation between the structures, will be a key success factor.

1 INTRODUCTION

1.1 SCOPE OF THE DOCUMENT

This document is aimed at updating the National Transport Strategy of Ethiopia. The document deals with the following main issues:

- a) an assessment of the regulatory and legislative environment impacting domestic and international traffic.
- b) an assessment of the institutional structure, financial and technical capacity of transport departments/agencies,
- c) an assessment of the extent to which the existing transport policy responds to the poverty reduction strategy and other National Development Policies and Strategies;
- d) an assessment of the extent to which the existing transport policy conforms to the international and regional conventions, agreements and protocols entered into by the Government of Ethiopia, including SDG and AU Agenda 2063.
- e) an analysis of the actual condition and the adaptations of the transport policy in view of the present and foreseeable trade patterns
- f) an analysis of the actual condition and the adaptations of the transport policy in view of the present and foreseeable social conditions
- g) an analysis of the financial requirements, sequencing and time frame for investment in the transport sector
- h) review and development of institutional legal framework
- i) review and assessment of tourism-based travel demand in relation with the expansion of transportation infrastructure with respect to all and each mode of transport
- j) an analysis and set of monitoring indicators and selection criteria for a prioritized investment program for the different transport modes
- k) an analysis of the modalities and the assistance required to implement the investment and policy reform program.

The document provides sub-sectoral policy notes, facing the transport subsectors evaluated in detail in previous documents. This type of structure allows to structure the strategic goals of sectoral level in sub-sectoral level objectives, defining the main accompanying measures which complete the investment plans already assessed for each sub-sector. These plans are prioritized and made consistent in a sectoral approach which provides a comprehensive evaluation of the financial effort requested.

2 LANDSCAPE OF THE NATIONAL TRANSPORT STRATEGY

2.1 INTRODUCTION

In order to provide an updating of the National Transport Strategy this document deals first the description of the landscape of such a strategy (Chapter 2). In this part are analysed the external conditions influencing the transport strategy (both international and national); a complete assessment of the sectoral regulatory and legal framework is then provided for each sub-sector. The main findings of the sub-sectoral evaluation are then grouped according with the main critical issues arising from the assessment, in order to understand the most important factors to be faced in the strategy designing.

Chapter 3 concerns the national transport strategy, which is defined starting from the results of the evaluation and provides the strategic objectives that must be achieved at sector level. These objectives are therefore organized at sub-sectoral level, through the identification of specific strategies, main objectives and most important implementation measures.

Since the institutional ability to carry out the public intervention in the sector is one of the main issues pointed out by the assessment, part 3.4 provides an assessment at institutional level and proposals to deal with an enhancing of

sectoral capacity building projects. The results of the field survey carried out in the transport institutions/enterprises are described and discussed (3.4.2 - 3.4.5). These outcomes are then enriched with further findings of other projects concerning institutional assessment at regional level (3.4.6). The final parts (3.4.7 - 3.4.13) suggests a method of management the sector capacity building projects in order to make them effective and to be able to direct future funding into a more organized environment.

Parts 3.5 and 3.6 deals with the investment plan and its financing issues. An investment prioritization and scheduling is provided in part 3.5 dealing with a synthesis of what emerges from the sectoral report, with specific reference to the base scenario. Part 3.6 deals with the issue of investment project financing, analysing the recent macro-trends that characterize the choices of the Governments for the funding of infrastructure investments and evaluating the national policies on this matter, at general level and in the transport sector domain.

The final part 3.7 deals with the ETMP delivery, providing conditions and concerns for the implementation of the plan.

2.2 THE EXTERNAL CONDITIONS OF A NATIONAL TRANSPORT STRATEGY

2.2.1 *International issues and conditions*

This part of the report aims to analyse the external conditions that influence Ethiopia's national transport strategy. In particular, an assessment is made here of the extent to which the existing transport policy complies with the international and regional conventions, agreements and protocols concluded by the Government of Ethiopia.

As regards the other factors, in particular those of a macroeconomic nature, which influence the national transport strategy, these have already been described in the previous reports,

particularly in the DMP, in the part concerning the definition of planning scenarios and the exogenous variables referred to.

The UN Sustainable Development Goals (SDG) and the 2063 Agenda published by the African Union are of great importance for the elaboration of a national transport strategy. In fact, although they cannot be considered equal to the point of view of the contents, there is no doubt that there is a strong convergence regarding numerous concepts developed in both documents.

The aim of the SDG is to establish a common vision for the way forward to advance along both the economic progress that social/environmental responsibility. In order to make all this real, the UN document suggests seventeen goals to be subscribed and put as a reference in the future political action by the world's governments, regional institutions, financial development banks¹. The goals are as follows:

- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- Goal 3. Ensure healthy lives and promote well-being for all at all ages.
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.
- Goal 5. Achieve gender equality and empower all women and girls.
- Goal 6. Ensure availability and sustainable management of water and sanitation for all.
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all.
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 10. Reduce inequality within and among countries.
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12. Ensure sustainable consumption and production patterns.
- Goal 13. Take urgent action to combat climate change and its impacts².
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat

desertification, and halt and reverse land degradation and halt biodiversity loss.

- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.

The SDGs have been embedded within the Ethiopian national planning since 2015, providing the first effort into the Second Growth and Transformation Plan (GTP II). A Voluntary National Review including six selected goals has been undertaken during 2017³, the goals have been as follows:

- SDG 1 Poverty eradication
- SDG 2 Food securitization and sustainable agriculture
- SDG 3 Healthy lives
- SDG 5 Gender equality
- SDG 9 Resilient infrastructure, inclusive and sustainable industrialization
- SDG 14 Ocean sustainability

Furthermore, in the last ten-year development plan (A pathway to prosperity) the ten pillars of the plan were compared with the SDGs through a specific alignment scheme⁴.

It is completely evident that almost all the seventeen goals have a connection with the transport system. In the following table these connections are briefly described for each of the goals, with a focus to the Ethiopia's situation.

¹ United Nations, Transforming our world: the 2030 Agenda for Sustainable Development, Resolution adopted by the General Assembly on 25 September 2015.

² This Goal is completed by a foot note as follows "Acknowledging that the United Nations Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change".

³ FDRE - Ethiopia 2017 Voluntary National Review on SDGs. For the details about the SDGs implementation in Ethiopia see the further part of the report.

⁴ See FDRE - Planning and Development Commission, Ten Years Development Plan. A pathway to prosperity 2021-2030. Table 3: Alignment of the national ten-year development plan with the SDGs, p. 23.

Table 1: SDG and Transport system's implications

SUSTAINABLE DEVELOPMENT GOALS	TRANSPORT SYSTEM IMPLICATIONS
Goal 1. End poverty in all its forms everywhere	The transport system is one of the main tools to eradicate poverty
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	The transport system is one of the tools to be used to fight against hunger, to assure food accessibility, to develop sustainable agriculture. The development of rural transport infrastructure (all kinds) will increase market accessibility and the ability to connect production sites to consumption places. Transport services has to be provided in order to transform the potentiality of movement in a real option.
Goal 3. Ensure healthy lives and promote well-being for all at all ages.	The transport system is one of the tools to ensure health to all citizens. The accessibility of medical assistance and hospitals from all human settlements is a basic principle that a transport system must satisfy. The transport system itself must be designed is a safe way, ensuring the minimization of accidents risks and, in a transitional period, the mitigation of it.
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	The transport system is a tool to ensure inclusive and equitable quality education. Accessibility to educational locations from all human settlements is a basic principle that a transport system must satisfy. Accessibility for vulnerable, disables and indigenous people must be guaranteed by the transport system
Goal 5. Achieve gender equality and empower all women and girls.	The same as 4, adding that the transport system must guarantee access to working opportunities without gender discrimination
Goal 6. Ensure availability and sustainable management of water and sanitation for all.	The role of transport system is twofold: <ul style="list-style-type: none"> • ensure accessibility to water resources in case of rural settlements without aqueducts (by supporting local communities to manage scarce resources 6.8) • avoid negative externalities impacting water resources
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all.	As the transport system is one the main consumer of fossils resources, its duty is to undertake a transition towards the substitution of its energy primary source. In the transitional period the system must ensure the continuous improvement of engines performances in term of energy efficiency
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	A sustainable transport system can boost a sustainable growth. Resilience and innovation in all components of the system (from design to realization, from service's concept to production and maintenance process) have to be set at higher level priority
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	This statement calls the transport system to innovate in its design and implementation procedures. First for the infrastructure domain but also for services' concept and production. The key factor here is innovation. ICT and digitalization, through the joint implementation of physical mobility and information, make the movement of people and goods more efficient under the point of view of energy consumption.
Goal 10. Reduce inequality within and among countries.	The transport system contributes to enhance the exchange of economic and social opportunities
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.	Cities can be a better place to live if the transport system allows them the freedom of movements and enhance the

SUSTAINABLE DEVELOPMENT GOALS	TRANSPORT SYSTEM IMPLICATIONS
	accessibility to basic services (health, education) and to working places. Also, the logistics side of waste management, particularly in growing cities, must be taken in account.
Goal 12. Ensure sustainable consumption and production patterns.	Sustainability of transport systems is a basic principle to be satisfied
Goal 13. Take urgent action to combat climate change and its impacts.	Same as 7. As the energy consumption of the transport system is high, the sector must undertake a transition towards new energy paradigm based on the zero emissions principle
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.	As Ethiopia is landlocked this statement seems to be of minor impact. On the contrary, as the country's development rely on international connections, the country has its own naval fleet and contribute with its import flow to the impact of marine pollution. Accordingly, Ethiopia could act positively both on the supply and demand side to shift towards more sustainable shipping services.
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	This is a general statement with an indirect impact on the transport system. As a part of the economic development, the transport system must become sustainable, avoiding the consumption of renewable resources and the degradation of the environment. For example, the choose of infrastructure's alignments should satisfy sustainable criteria.
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	This goal, despite its wide scope, is of strictly political kind. There are no direct impact on the transport system.
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development.	This goal is similar to the previous one. However, it focusses on the means to reach the general political aims. Under this point of view there are many topics that can impact the transport system. For example, the area of Technology should be an opportunity to improve a sustainable development of the transport system. The Capacity Building area is of huge importance, because the development of human capital in the transport system can boost the transition to a more sustainable sector. In the Trade area, the adoption of the AfTA is the main target involving the transport system. Eventually, the area concerning Policy and Institutional coherence calls for the importance of maintaining a long-term effort towards a sustainable transport system. This, in turn, calls for a long-term planning and a coherent implementation framework, including a strong monitoring system.

The analysis of SDGs highlights, on the one hand the important role of the transport system as a tool to improve development sustainability, on the other hand the need for a deep revision of the operating mode of the transport system itself, both as an important consumer of non-renewable, pollutants and climate-changing energy sources and as a soil consumer. In other

words, as the majority of SDGs calls for an active role of the transport sector, at least goals nr, 7, 8 and 9 stresses on the other side of the coin, pointing out the challenges that are on the field for the transport system in order to achieve its operational sustainability.

The Agenda 2063 is based on seven major Aspirations; it is a crucial political document,

aiming at produce a turning point in the continental development. The Agenda states that "Africa, over the last decade has experienced sustained levels of growth, greater peace and stability and positive movements on a number of human development indicators. We recognise that sustaining this path and pace, though positive, is not sufficient for Africa to catch up, hence the need for radical transformation at all levels and in all spheres. Africa must therefore, consolidate the positive turn around, using the opportunities of demographics, natural resources, urbanization, technology and trade as a springboard to ensure its transformation and renaissance to meet the people's aspirations"⁵.

The road map for the 15 years following the adoption of the agenda, establishes the priorities between the action to be undertaken to achieve long-term goals declared in the agenda. The main priorities and related actions are as follows:

- a) Eradicate poverty in the coming decades,
- b) Provide opportunities for all Africans to have decent and affordable housing
- c) Catalyse education and skills revolution
- d) Transform, grow and industrialise our economies:
- e) Consolidate the modernisation of African agriculture and agro-businesses:
- f) Act with a sense of urgency on climate change and the environment,
- g) Connect Africa through world-class Infrastructure,
- h) Fast-track the establishment of the Continental Free Trade Area and speed up the development of intra African trade and of the financial institutions required.
- i) Support young people as drivers of Africa's renaissance,
- j) Silence the guns by 2020, through enhanced dialogue-centred conflict prevention and resolution
- k) Achieve gender parity in public and private institutions,
- l) Introduce an African Passport,
- m) Consolidate a democratic and people-centred Africa,
- n) Enhance Africa's united voice in global negotiations,
- o) Strengthen domestic resource mobilisation, build continental capital markets and financial institutions, and reverse the illicit flows of capital from the continent,

- p) Set up an implementation, monitoring, evaluation system.

Despite many of the priorities listed above are of political kind, there are numerous and very important implications of these actions on the transport system, as for the afore mentioned SDG. Letters from a) to h) and o) are strongly influenced by the state and performance of the transport system, while letters i), and k) can find in the transport system one of the instruments to reduce inequalities and enhance a fair development. Moreover, at least letters d) and f) request a strong commitment of the transport system to both increase its effort to physically connect the continent and undertake such mission in a sustainable way.

Differently from the SDG, which are goals set at global level, the dimension of African inter regional trade is strongly pointed out in the Agenda 2063. The role of transport system in this process of creation of a single continental market is essential for at least three factors:

- the improvement of the physical connections among different countries,
- the reduction of technical and administrative barriers to the mobility of people and goods (non-tariffs barriers);
- the possibility to develop a large scale and transport related manufacturing industry, able to serve the different African countries and to compete with foreign providers.

The African Commercial Free Trade Area (AfCFTA) represent the implementation of a 2012 decision of the African Union. It has been established by a specific agreement, signed in 2018 and entered into force in 2019. The agreement, signed by 54 out 55 AU's Members, contains three protocols: Trade in Goods, Trade in Services, and Rules and Procedures for Settlement of Disputes, which form an integral part of the agreement⁶. A second phase of the negotiations will focus on investment, competition and intellectual property rights. This indicates the willingness of a further deepening of African integration on the model of what has already occurred for Europe starting from the 1970s of the last centuries.

Within the free trade area the countries will progressively remove trade tariffs at different speed subject to the status of Less Developed Country or Non-LDC. The latter will have a higher speed of reduction of their trade tariffs barrier in

⁵ Agenda 2063, the Africa we want. September 2015.

⁶ Agreement Establishing the African Continental Free Trade Area, 2018. The Agreement has been ratified by 34 countries.

terms of time, while LDC (Ethiopia is included) will have more time to adapt their prices.

As the area of Trade in Services is concerned, five priority sectors have been identified: Business services; Communications; Finance; Tourism and Transport. These sectors will lead the way for the first practical application of the agreement, by sharing joint schedules for specific commitments. Therefore, even in this case the role of the transport system is of great importance in its own double task of economic integration tool and promoter of new development opportunities.

The picture of the main external conditions on the institutional side described so far led to highlight some fundamental steps to the definition of the national transport strategy of Ethiopia, namely: the publication of the SDG by the United Nations, the publication of the Agenda 2063 From the African Union, the adoption of the AfCTA by almost all African countries.

With respect to these acts, which the country has signed as a member of the United Nations and the African Union, it is now necessary to examine to what extent the current transport policy of the country has transposed the common will and the guidelines contained therein. In order to undertake this task, we will refer to the National Transport Policy (NTP) issued by MOT⁷ and, with a wider target, to the TYP.

The NTP states its General and Specific objectives in the following way:

⁷ National Transport Policy of Ethiopia, May 2020

Table 2: General and specific objectives of the National Transport Policy

General objectives	Specific objectives
Make sure that the transport sector competently contributes to enhance the overall economic development and social interaction	Foster rural, rural to urban and intercity transport linkages by ensuring accessibility and development of transport infrastructure and services,
	Encourage and expand transport systems operating on renewable energy without compromising the safety of the natural environment by ensuring that the transport sector is environmentally friendly and does not harm the natural environment,
	Ensure that the regions are key actors and beneficiaries by augmenting their capacity in transport infrastructure and service operation activities.
Make the transport sector convenient, efficient, safe and accident free, Information Technology (IT) supported, reliable and accessible	Make sure the transport infrastructure and service is safe, secured and not susceptible to accidents.
	Enable the transport sector adapts to latest technology options and make our transport system competitive and preferred.
By guaranteeing the strategic, economic and social benefit for our country, ensure an equitable and efficient transport infrastructure and services operation.	In addition to the in-country network the transport infrastructure and service avails, make sure our country is benefited by strengthening regional, continental and global linkages.
	Realize easy and efficient movement of people and logistics services by integrating and coordinating the transport infrastructure with transport service.
	Taking the fact that Ethiopia has no port of its own into account, the transport infrastructure and service should work to narrow the inevitable gaps that occur as a result.
	Operate a number of intercity mass transport options
	Enhance the involvement of the government and private investors and encourage private investment by overcoming the various structural and procedural limitations evidently observed in the sector

Source: NTP, 1.5 Policy Objectives

In addition to the contents of the NTP, it is also necessary to make a brief mention of the TYP as regards transport policy, even if this topic is also addressed in another part of the report (see 3.2.2). In this regard, it should be noted that the plan mentions numerous sectoral policies (which substantially cover all the transport subsectors) and many horizontal or specific aspects (non-Motorised Strategy, Coordination of Railway Stakeholders, Automotive expansion strategy, etc).

The evaluation of the existing Ethiopian transport policy in relation to the main international acts subscribed by the country, highlights some main findings.

The first topic is related to the huge importance that both the SDG and the Agenda 2063 give to the concept of sustainable development. This concept seems to be not sufficiently focused in the NTP, despite it is implicitly contained in many

actions deriving from the single objectives stated by the Policy. Nevertheless, some horizontal policies issued by the country seems to tackle this concept in a better way than the general sector policy. It is the case of the Non-Motorised Strategy (NMS), issued in 2020⁸, which is an example of how sustainable development can suggest a path to make the transport sector (mainly the road subsector) less dangerous, more friendly and close to the citizens, particularly the less protected categories like pedestrians and cyclists. The goals setting carried out by the NMS, though limited to a little part of the transport system's impact, is strictly linked with the SDGs approach to sustainability.

A similar reasoning can be done with reference to the Climate Resilient Transport Sector Strategy,

⁸ Ethiopia Non-Motorised Transport Strategy, 2020.

issued in 2017⁹. Also, in this case the setting of the objectives clearly refers to the SDGs approach, trying to outline a reference framework for the long-term action concerning the entire transport system. However, the document chooses an approach that is mainly focused on the impact of climate change on the transport network. This topic is certainly a problem of immediate relevance for the country but is not the only element to be taken in account for a long-term strategy. Following this field of preferential intervention, CRTSS neglects the policy of prevention/mitigation of climate-changing emissions coming from the transport system, failing to intercept the future impact of growth of both the population and demand for mobility linked with the country's development.

The second finding concerns the international dimension of transport policy, i.e. the extent to which this policy takes into account the problems deriving from abroad as issues to be addressed and managed. From this point of view, it is clear that the SDGs, the Agenda 2063 and the AfCFTA are, with different degrees of obligation, commitments to be both respected and implemented within the domestic political framework.

In this regard, it must be said that the international dimension is addressed in the NTP. Although AfCFTA as a single issue is not considered a driving factor of the Policy, two specific objectives of the NTP are linked to the international matter. They are both related to the topic of the physical connections among countries: one in general terms ("make sure our country is benefited by strengthening regional, continental and global linkages") another specifically referred to the land connections of the port corridors ("the transport infrastructure and service should work to narrow the inevitable gaps that occur as a result").

However, the absence of a specific AfCFTA issue in the NTP it is not something of minor relevance. In fact, the expected impact of the agreement's implementation is very important in the long term. As reported in the table below, Ethiopia should be the seventh country in the impact ranking of the AfCFTA implementation, with relevant reductions in customs' time process and iceberg costs¹⁰.

⁹ Ethiopia's Climate Resilient Transport Sector Strategy, 2017.

¹⁰ WB, The African Continental Free Trade Area. Economic and distributional effects, 2020. The estimation is based on a methodology quantifying the short and long term impact of Trade Tariffs and Non Tariffs Barriers conducted by a team of

Table 3: Impact of AfCTA implementation (percentage).

	Reduction of time in customs due to TFA implementation	Reduction in iceberg trade costs
Nigeria	31,8	10:00
Congo, Dem. Rep.	23:07	10:00
Cameroon	17:09	10:00
Egypt, Arab Rep.	16:07	10:00
Tanzania	16:06	10:00
Zimbabwe	15:03	10:00
Ethiopia	11:01	10:00
Kenya	10:09	10:00
Côte d'Ivoire	08:05	08:05
Uganda	05:07	05:07
Burkina Faso	04:05	04:05
Ghana	04:03	04:03
Zambia	04:02	04:02
Mauritius	02:06	02:06
Botswana	02:06	02:06
Namibia	02:06	02:06
South Africa	02:06	02:06
Madagascar	02:01	02:01
Rwanda	02:00	02:00
Tunisia	02:00	02:00
Morocco	01:06	01:06
Senegal	00:03	00:03
Mozambique	00:00	00:00

Source: WB, *The African Continental Free Trade Area. Economic and distributional effects.*

Such kind of impact should not be neglected in a transport policy of a country, even more so if the country is a landlocked one. On the contrary, the positive impact of measures reducing trade transport costs and customs' time process are explicitly considered within the benefits arising from the implementation of the National Logistics Strategy (issued in 2019) which provides the implementations of a big number of actions aiming at enhance both the effectiveness and the efficiency of the sector. A sub set of actions of the NLS concerns international issues: from the opening of the road transport market for the international services to the establishment of a regional single window service, from the

development of standard customs procedures for foreign trade to the smoothness of containers' movements, etc.

To conclude, the NTP seems to consider only partially the most relevant issues that are contained in the international agreements to which Ethiopia is a signatory or to which it is committed. This judgment is mitigated by the fact that a series of sectoral documents, ranging from the National Logistics Strategy to the Non-Motorized Strategy or the Climate Resilient Transport Sector Strategy, are instead taken into consideration and form the basis of the related implementation.

3.1.2. The national policies influencing a national transport strategy

Mirroring the previous section, the aim of this paragraph is to analyse to which extent the National Transport Policy and other relevant national policies respond to the poverty reduction strategy and other social issues inextricably linked to poverty. As stated in the previous section the macroeconomic factors influencing the national transport strategy are not included here because they have been described in the previous reports and in the DMP report.

The national strategic documents taken into consideration in this section are the following:

- The National Transport Policy of Ethiopia (2020);
- The Ethiopia Non-Motorised Transport Strategy 2020-2030;
- The Ethiopia's Climate Resilient Transport Sector Strategy.

The National Transport Policy of Ethiopia (NTP)

The key role played by the transport sector in ensuring economic and social growth for the whole country is widely recognised by the NTP which states that its mission is *"to benefit our society **equally** and create linkage and economic integration among people; support and speed up the economic development; attain **accessible, integrated, efficient, effective, reliable and transparent system that takes paying ability into account and supported by Information technology**".*

Two fundamental social concepts are thus present in the first statement: transport has to be equitable and accessible to all. Those ideas are also reaffirmed in the NTP General Objectives, which are:

- Make sure that the transport sector competently contributes to enhance the overall economic development and **social interaction**;
- Make the transport sector convenient, efficient, **safe** and accident free, Information Technology (IT) supported, reliable and **accessible**;
- By guaranteeing the strategic, economic and social benefit for our country, ensure an **equitable and efficient transport infrastructure and services operation**.

In the NTP general objectives is therefore recognised the fundamental role of transport sector in providing connectivity to the people, thus reducing isolation and contributing to social interaction.

Nevertheless, the role of transport in improving living conditions of the poor and vulnerable people is not explicitly mentioned, even if the same idea of accessibility, and thus affordability of transport, is strictly interconnected with poverty.

It is worth noting that transport sector may have a great impact on poor and vulnerable people provided when other interventions are also adequately put in place and vice versa; indeed, without a good transport system many sectoral interventions may be ineffective: e.g. well-equipped health posts are useless to poor people who cannot reach them somehow.

Improved access and mobility are critical for reducing isolation, vulnerability and dependency not only for the poor but also for vulnerable people, such as elderly or people with disability. In this sense, transport alone cannot reduce poverty, but it can serve as a crucial leverage in many ways.

However, to think that any transport intervention necessarily has a beneficial impact on the poor or on the most vulnerable population would be a mistake. The poor can indeed benefit from road transport projects for example but meeting their needs on a sustainable basis depends on the details of the project design, which has to listen to the poor and understand his needs.

Moreover, it is worth noting that the emphasis on the social aspects of transport is not adequately acknowledged in the formulation of the Specific Objectives stated in the NTP and reported in the table 4.

Other aspects are stressed out in the specific objectives, such as: the interconnection of the transport sector with the logistics sector in the aim of broader economic development; the role of transport in the regional integration, the role played by private investments in modernising the sector, strengthening institutional coordination, improve transport safety and encouraging a sustainable and environmentally friendly transport.

The only objective in which the social component is present is the first one, which states: *"Foster rural, rural to urban and intercity transport linkages by ensuring accessibility and development of transport infrastructure and services"*.

Making rural and isolated areas better connected will have a great impact on the poor and vulnerable population, whose majority is traditionally located in rural areas.

When we talk about rural transport is essential to differentiate between roads passing through rural areas vs roads serving the needs of rural communities. Rural roads are often described as rural access, feeder, agricultural or community roads. Such roads connect various settlement of less than 2000-5000 inhabitants to each other and to higher classes of road and higher population settlements.

A great deal of the transport time of rural people is spent on paths close to the village that are used to access water, fuel wood, fields, pastures and village amenities. Footpaths are also the main way in which most rural people start their journeys to connect to the road network, transport services and towns. The problems and the isolation of rural people can be exacerbated by poor footpath condition and/or the lack of bridges that would allow the safe crossing of rivers. An important aspect is that women and youth usually undertake the great majority of rural transport.

For instance, according to the 2020 Ethiopia Poverty Assessment, issued by the World Bank, fifty-seven percent of the poor live more than three kilometres away from an all-weather road. When interviewed, poor rural people in Ethiopia often cite the need for better transport (roads and transport services) as key investments that would improve their lives. Investment in rural roads can involve connecting villages that are not on the road network and/or improving the maintenance and quality of existing rural roads. Both types of investment bring significant benefits to rural communities and to poor people, but there is evidence that the greatest benefits often come from providing motorable access to people that are currently far from any road.

In particular, improving rural transport can have a positive impact through four main channels:

- **Increase in agricultural production.** The lack of rural roads and the poor quality of road infrastructure is a major constraint to agricultural production and, therefore, to the economic development of the country.
- **Access to health care.** Maternal and perinatal mortality are among the most common causes of death in rural areas. The corollary of the problem analyses is that constructing and maintaining rural roads, paths and bridges leads to improved maternal health outcomes and healthier rural communities.
- **Access to education.** Rural roads can greatly influence where schools are built, how many rural boys and girls go to primary and secondary schools and how adequately the schools are staffed. In most countries, rural primary schools are within walking distances of their catchment communities, but secondary schools are more spaced out, requiring much longer average journeys.
- **Local workforce involvement.** There is much evidence that involving local people in labour-based road construction and maintenance can provide valuable employment for poor people and help empower women and disadvantaged groups. Instead of construction and maintenance funds going towards the use of heavy equipment, imported fuel oils and urban-based contractors, the money is spent on employment within rural areas. The money 'transferred' in this way can reduce poverty and improve livelihoods, particularly for people for whom there are many days of work over a

long time.

Regarding the NTP, the impact of the transport sector in improving agricultural production is explicitly cited, in urging the issuing of a new Agriculture and Rural Development Policy: *"Complying with the agriculture policy, the transport sector allows timely supply of agriculture products to the market and provides transport service in every step of the production process to avail sustainable and competitive supply of agricultural inputs"*.

It is worth highlighting that the social role of transport is not limited to the inclusion of poor people; there are other categories which are considered at social risk: such as women, the elderly, youth and handicapped people. The NTP takes steps forward in this regard highlighting a particular attention to the needs of such categories, stating that *"the transport sector strives to increase women's participation and enhance their benefits. It also focuses on job creation options for the youth, hence, considers the above-mentioned matters in policy preparation"*.

Aside from this statement, the objective to foster a gender-inclusive and youth-inclusive transport is not included in none of the NTP specific objectives while the need of disabled people and elderly are not mentioned at all.

Transport infrastructure and services are often incorrectly considered "gender neutral" while in fact, mobility is experienced differently by women and men, as they use different modes of transport for different purposes and in different ways depending on their socially determined reproductive, productive, and community-related gender roles. Women's and men's relative economic and social status and livelihoods also influence their different transport needs and utilization of transport services.

These differences need to be well understood in order to inform the design of gender-inclusive transport projects. Gender dimensions of transport become more evident when transport investments are viewed in terms of enabling the mobility of people for different purposes and needs, and by different modes—which are experienced differently by women and men, girls and boys—rather than in terms of mere investment in hard infrastructure that equally benefit all social groups.

The same argument is applicable to youth, for whom an affordable transport service is essential to find an occupation and this is especially true in urban areas.

Therefore, a Transport Strategy has to take into consideration all those categories and strive for encompassing their needs and encouraging tailored solutions for them, also calculating the potential impact of each measure to the more vulnerable social sector of the population.

Upgrading transport services for instance may lead to an increase in tariff regimes, making the services less affordable to the poor, and contributing to increase isolation; so, in this case, subsidy could be an important policy option for ensuring equitable transport access for poor and vulnerable people. Moreover, a focus on transport sector only on who can pay for the transport service excludes other transport users, such as pedestrians or street vendors, implicating safety problems for the latter.

Thus, affordability of transport is only a small part of the equation: without affordable access and without adequate mobility, poor people will be unable to take full advantage of any improvements in other social services, such as health, education, safe water, social protection etc.

The Ethiopia Non-Motorised Transport Strategy 2020-2030

In Ethiopian cities and rural centres, the vast majority of residents rely on walking, cycling, and public transport. In order to improve the walking, and cycling environment, UN Environment and UN-Habitat appointed the Institute for Transportation and Development Policy (ITDP) to assist the Government of Ethiopia through the Ministry of Transport (MoT), Federal Transport Authority (FTA), Ethiopian Roads Authority (ERA), and Ministry of Urban Development and Construction (MUDC) in the preparation of the Non-Motorised Transport (NMT) Strategy 2020-2029 under the auspices of the Share the Road initiative.

Issuing a specific Non-Motorised Transport Strategy (NMTS) has a crucial social value, because walking or cycling is the dominant transport mode for low-income groups (as explicitly recognized in the document). As stated in the NMTS, *"in spite of a dramatic increase in motorisation in Addis Ababa, the largest share in the capital city among modes of transport is still walking (54 percent), followed by public transport (31 percent)."*

The NMTS represents also a paradigm shift that restores dignity to modes of transport that are often neglected because considered underdeveloped and explicitly recognizes the need for integration of transport planning and

other disciplines, such as urban planning and architecture for a successful and socially sustainable transport sector. In fact, it states that *"the tendency to favour motorised modes stems from a number of factors. The educational curriculum in civil engineering and transport planning programs in the country has historically emphasised highway design and construction and has placed less emphasis on NMT. In addition, the design process typically involves civil engineering experts but not necessarily disciplines such as urban planning and architecture"*.

As stated before, Non-Motorized Transport is not only related to the benefit of the most vulnerable income groups but also to transport safety. Too often in the past years transport infrastructure studies have been conducted only considering drivers as main stakeholders. A focus within transport sector on only those who can pay for transport infrastructure excludes other transport infrastructure users, such as pedestrians, cyclers or street vendors as well as traffic laws established without considering them put all transport users at a greater risk from impacts such as injuries.

According to the World Health Organisation (WHO), road traffic deaths in Ethiopia are estimated at 27,326, amounting to a death rate of 27 per 100,000 population. The main causes of crashes include poor road design, negligence of drivers, and technical faults of vehicles. Vulnerable road users, including pedestrian and cyclists, are the most affected and pay a heavy toll in terms of deaths and injuries. Pedestrians account for the highest proportion of road fatalities in Ethiopia or 37 percent of all deaths.

In this regard, the NMTS reaffirm that *"All Ethiopian citizens have the right to safe and efficient transport services and infrastructure. The NMT Strategy will ensure universal access in provision of transport infrastructure and services. Universal access is the concept of designing transport services and environments that as many people as possible can use, regardless of age or ability. Streets designed according to universal access principles accommodate assistive devices for particular groups of persons with disabilities"*.

Therefore, it can be stated that, contrary to what has been said regarding the NTP, the NMTS explicitly recognizes the importance of taking into consideration the need of disabled people as transport infrastructure users and calls for a transport and urban planning aimed at creating an accessible transport environment for all, described as follows: *"an accessible environment has ample, well connected pedestrian facilities with*

unobstructed space for movement, consistent pavement surfaces, appropriately sloped ramps, and safe pedestrian crossings. Multiple elements of the streetscape must be designed in an integrated manner in order for the space to work. People with small children, people carrying heavy shopping or luggage, people with temporary accident injuries, and older people can all benefit from an inclusive transport environment."

Reaffirming this commitment, the NMTS assures that *"the Government will ensure equitable allocation of resources to the various transport modes and equitable access to efficient and safe transport services. Transport investments will prioritise modes used by lower income groups, including walking, cycling, and public transport, and road space will be allocated equitably to facilitate safe access through these modes"*.

The attention to the gender-related aspects of transport is also explicitly mentioned as well as the importance of a transport infrastructure design aimed at guaranteeing a safe transport experience for women: *"the Strategy also seeks to ensure gender equity by supporting the development of an integrated and safe transport system that provides access to education, work, health care, cultural, and other important activities that are crucial to women's participation in the society. Of particular concern in the context of street design is the level of safety and security that female users experience. Inclusive designs help to improve the experiences of women and girls, making it easy to walk, cycle, or use public transport."*

In conclusion, it can be said the Non-Motorised Transport Strategy is a document strategically oriented to the more vulnerable groups of the society, which takes into account the needs of the lowest income groups, as well as elderly, disabled and women and recommend real actions to ensure an equitable and safe transport for the whole society.

The Ethiopia's Climate Resilient Transport Sector Strategy

The Ethiopia's Climate Resilient Transport Sector Strategy (CRTSS) calls for *"an affordable, integrated, safe, responsive and sustainable transport system that enhances the environmental, economic, social and cultural well-being of Ethiopia's population."* The Government of Ethiopia aims to reduce greenhouse gas emissions by 255

Mt CO2e or 64 percent, compared to business-as-usual emissions by 2030. The reduction includes 10 Mt CO2e from the transport sector.

Essentially, the CRTSS acknowledges the key principles of safety, sustainability, integration and affordability, consistent with the Government's vision previously outlined in the Climate Resilient Green Economy Strategy and existing sectoral strategies and plans.

Within this context, five strategic objectives are declared:

1. Strengthen transport planning processes;
2. Improve access, mobility and quality of service;
3. Ensuring environmental sustainability;
4. Promoting public health and reducing social disadvantage;
5. Achieving economic efficiency.

To achieve these outcomes the Strategy identifies a planned and coordinated set of aspirational targets and actions that also address the challenges identified in the accompanying Sector Assessment. These provide a benchmark against which to measure progress, enabling monitoring for evaluation of progress.

From a social-focused perspective, the fourth objective is extremely important in recognizing the link between a healthy environment, the role of sustainable transport and its social consequences. This link is explicitly outlined in the incipit, which states that: *"Transport plays a vital role in building healthy and equitable communities. Reducing the levels of congestion, the amount of travel by motor vehicles, and improving fuel quality and engine technology can improve public health by reducing harmful pollutants and GHG emissions. Encouraging non-motorized transport choices can also improve individuals' health – both mental and physical. Improving access to goods, services, and employment and education opportunities for people across all parts of the country and to enable everyone to participate actively in society, special attention needs to be given to those whose travel choices are limited by disability, socio-economic status or provision of choices."*

This vision is also confirmed in the relative outcomes and performance targets, as show in the table below.

Table 4: Outcome and Performance Targets from CRTSS

Outcome	Performance Target
Main outcome: Reduced exposure to the negative	reduction in the average annual concentrations of transport-related pollutants (PM2.5, PM 10, NO and NO:/NO.) at selected roadside locations

impacts of transport pollution on human health	The number of times that health standards for the following air quality measures are exceeded at selected roadside locations is no more than: 9 occurrences p.a. for NO ₂ ; 1 for PM 10 and CO and 0 for PM _{2.5}
	Improvement in reducing traffic noise-related exposure
Main outcome: increased walking and cycling	Increase in walking and cycling mode share in urban areas (measured in terms of trip legs) to 35%
	Increase in the average distance travelled by walking per person over five years of age to 1.3 km per day
	Increase in the number of cyclist movements at defined survey points
Improved street design (for people and environment)	Improved perceptions of walkability of urban neighbourhoods and business districts
	Increase in the availability of variety of trip leg options for business and educational purposes

Source: *Climate Resilient Transport Sector Strategy*

Within this perspective, the CRTSS is inextricably linked to the NMT Strategy, since it recognizes that the promotion of NMT and efficient public transport are key means of mitigating greenhouse gas emissions and reducing energy use. It also reaffirms the need of integrating transport planning exercise with urban and street planning to ensure a safe environment for all.

In conclusion, the key role played by the transport sector in contributing to social benefit of the whole society is widely recognised in all transport strategic documents issued in Ethiopia.

In this vision it is essential to take into consideration the needs and peculiarities of the most vulnerable groups of the society (such as the poor, disabled, youth, elderly and women) and the impacts of each transport projects on

those groups. This commitment is also present in all documents even if at different level.

The National Transport Policy incorporates this vision but does not explicitly translate it in the drafting of its objectives; on the other hand, both the Non-Motorised Transport Strategy and the Climate Resilient Transport Sector Strategy define a series of social stakeholders to whom particular attention should be paid and outline a series of actions to ensure that this vision materializes, albeit in the long term.

Therefore, the National Transport Strategy will integrate these motions already present in those policies and strategies with the overall objective of making sure the transport sector be equitable, accessible and efficient to the whole Ethiopian population, especially the most vulnerable.

2.3 ASSESSMENT OF THE REGULATORY AND LEGAL FRAMEWORK OF THE TRANSPORT SECTOR.

2.3.1 Assessment

The administration of the transport sector is based on the constitutional principles of the FDRE. The basic principle states (Articles 51.9 and 55.2.c) that responsibilities assigned at Federal level (Federal Government and House of Representatives) concerns development, administration and regulation of air, rail, waterways and sea transport and major roads linking two or more Regional States. Below the Federal level, the Regional States are responsible for the construction, maintenance, and management of roads that start and end in their boundary. Moreover, the Federal Government may delegate the Regional States to exercise its powers (Art. 50.9), though no such delegation has been made for transport matters.

The above-mentioned public responsibilities do not only concern the aspects of administration and regulation but also those - of a more far-reaching nature - of the transport sector's development. That is to say that the role of the public sector in ensuring the existence and development of networks and transport services in Ethiopia is essential.

This means that the public duty is not only to administrate/regulate citizens' behaviours and the economic entities providing services and economic activities within the sector, but also to create the conditions for the improvement of the sector itself. Although there is no specific reference to a "right to mobility" in the Ethiopian constitution, binding public authorities to undertake specific actions to ensure it, the right

of "freedom of movement" could be widely considered as a duty in charge of the public entities to create the conditions that make people able to move freely throughout the country.

This broad concept of public duties on transport systems appears to be a pillar of sector development. If we look at the huge growth in the Rural Access Index achieved by the country (from 13% in 1997 to 60% in 2019, according to the last ERA RSDP Assessment Report¹¹) it is easy to understand that the possibility of Ethiopian citizens to move from one place to another has far increased. This was possible thanks to the huge development of the road network, both national and local, resulting from notable investment programs.

On the other hand, the growth of the RAI index does not mean that accessibility has progressed at the same speed. Implementing the right to mobility means ensuring significant improvements in travel times to access the market or basic services. From this point of view, beyond the provision of physical connections through the development of infrastructure, the right to mobility for Ethiopian citizens has become more realistic due to the significant increase in transport services. Buses circulating on the national network increased by an average of 13.5% annually from 2002 to 2018, while for freight services the increase in trucks and trailers using the network was on average 11.9% annually. However, looking at the rural accessibility, the situation shows an important variability among woredas (see the sectoral plan for road).

National level (by sector)

The powers and duties of the Ministry of Transport are stated in the Proc. No 1097-2018. Its organizational structure is based on Bureaus and Directorates and was the result of a redesign that brought the former directorates from six to twenty-two, organized by themes/functions. A recent revision of this structure re-focuses the directorates also on transport modes through a mixed approach by modes and themes.

The total number of people at MoTL is currently 163 employees with 86 vacant positions¹². Despite the fact that most of the operational tasks and many of the regulatory and planning

functions are carried out directly by the sectoral authorities/agencies, with much greater resources, the number of employees of the MoTL appears to be low.

There is an ongoing program to implement an increase of the staff that should reach about 380 people.

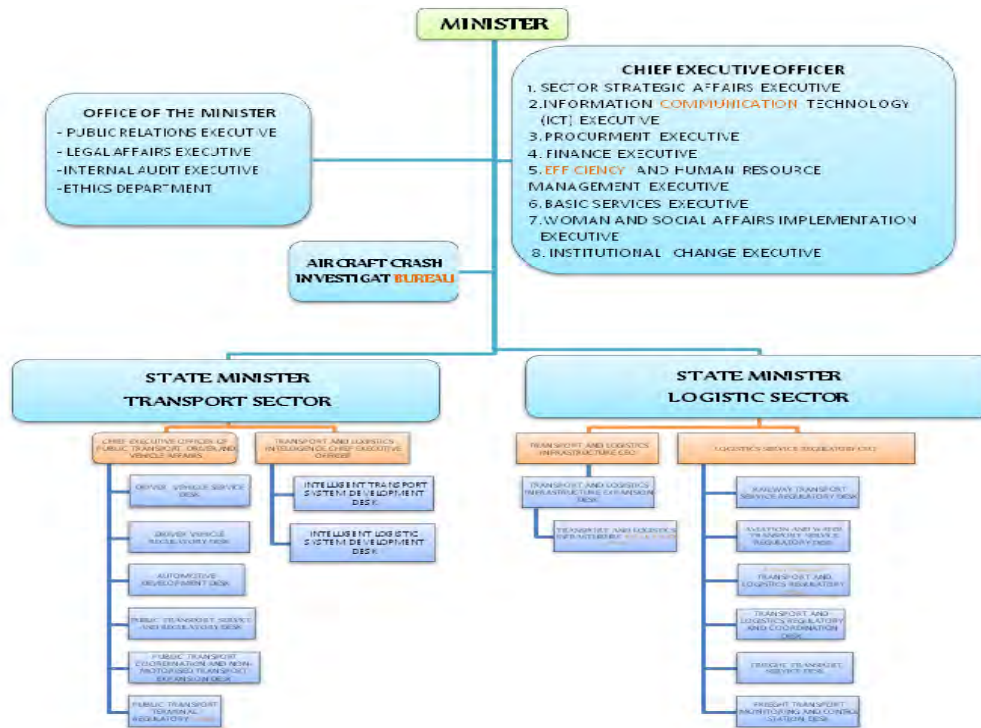
A recent assessment conducted within a World Bank technical assistance program¹³, identifies some critical gaps to be filled related to fast turnover of the employees, low level of wages (absolute and compared to the authorities' salary level) and training possibility.

¹¹ ERA RSDP 22 years performance assessment report, Addis Ababa, 2020

¹² Data collected at MoTL, Department of Human Resources, December 2020.

¹³ Expressway Development Support Project (P148850). COMPONENT 3: Road Safety and Institutional Development Support to the Transport Sector.

Figure 1: Organizational structure of the Ministry of Transport



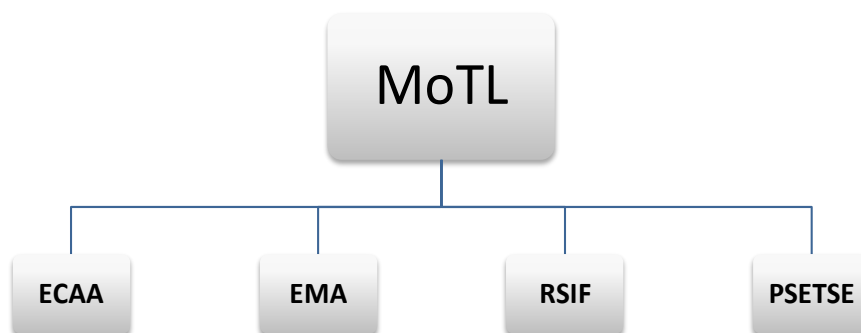
Source: MOTL

As depicted in the figure above a numerous group of staff offices are coordinated directly by the Minister, while the two State Ministers coordinates, through four related CEO, the main line desks.

The Minister supervises their responsible institutions/enterprises that are represented in the following figure. Since the new organization of powers and duties of the Federal Organs has

proceeded to transfer the supervision of public enterprises to PEHA, the MoTL no longer exercises direct control over these companies. However, since these enterprises still constitute the main way of public intervention in the transport sector, the supervision of PEHA should be interpreted as a financial coordination, while the MoTL are assigned to the sectoral objectives.

Figure 2: Institutions/Enterprises accountable to the Ministry of Transport



The accountable institutions/enterprises are described in details within the respective sectoral sub chapters.

Roads.

As stated above, road sector is governed both at Federal and Regional States level. At Federal level

the governance is based on the chain MoTL/MoF → National authorities/agencies → Public enterprises/Market, while at Regional States level the chain is Regional governments → Regional authorities → Regional enterprises/Market. Aside the administrative classification, a further distinction is needed according with the kind of public service concerned: infrastructure delivery or services providing. While the Government's responsibility is assigned to the same apical level (respectively, Federal and Regional) authorities and enterprises vary according with the kind of service concerned.

As road infrastructure is concerned, the Ethiopian Road Authority (ERA, now Ethiopian Road Administration) and the Road Fund (RF) are the pillars of the road network policy in the country. ERA was re-established in 2011 by Reg. No. 247-2011 as an autonomous office of the federal government with its own legal personality. The purpose of the Authority is far-reaching: to develop and administer roads, to create favourable conditions for road development, to ensure that standards are maintained in road construction. According to this mission, the powers and duties of the ERA are numerous and varied, going from preparation of policies and laws road-related to road development planning, from procurement of civil works, design and constructions to technical support to regional road authorities upon the request of the latter.

The provision of road infrastructure as a public service mainly consists of the construction and maintenance duty. This in turn implies the need to develop adequate skills capable of planning, designing and managing infrastructures. The road sector development program (RSDP) is the main Ethiopian road development program and, over the years, has achieved very important results, not only in the physical increase of the road network but also in the progressive enhancement of the institutions (ERA first) in charge of the infrastructure providing.

Investment financing for the construction of road networks comes from the national budget or international loans, this means that for this decisive topic the role of the Ministry of Finance is crucial. In fact, ERA is under the jurisdiction of the MoTL but receives from the MOF an annual amount assigned to investments on the federal road network according to the plan that the authority itself contributes to processing. This means that ERA is in a crucial point in the development and implementation of sectoral policies.

This re-focusing of the authority's tasks walked side by side during the years with the implementation of a number of capacity building programs, provided jointly with the bigger road development funding programs delivered by the leading development banks. In this way ERA has become a competence centre for the "sisters' authorities" at local level.

Nevertheless, a single well-structured agency cannot solve alone the problem arising from the accelerated growth of the road network and of a systematic maintenance lack. As also arisen from the interviews conducted at MoTL's level, and reflected in the official documents aforementioned, maintenance activities, particularly below the Federal level, does not comply not with quantity, nor with quality standards requested by a growing network. This issue is well known both at MoTL and ERA level and the recent reorganization of the ERA Directorate in charge of the implementation of the Road Asset Management System, testifies that the current status of the whole national maintenance process is not satisfying.

In terms of public funding, the maintenance effort is mainly supported by the Road Fund, established in 1997 by the Proc. No. 66/1997. The fund's mission is to finance road maintenance and road safety measures, through the resources deriving from the following sources: a) state budget, b) fuel withdrawal by purpose, c) annual vehicle license fees and d) other road tariffs possibly established. RF governance is entrusted to a Board and a RF Office. The Board is composed of representatives of the Government, Regions and road users, while the Office has an own legal personality. The Found was accountable to the MoTL, while the Fund's Board is appointed by (and accountable to) the PM. In the new organization of powers and duties at federal level, the RF has lost its legal personality, accordingly the new ERA is now formally in charge of the RF's tasks.

In order to achieve the purpose for which it was established, RF collects road maintenance revenue and assigns it to federal, regional and urban organism in charge of maintenance. Due to the high growth of the road network, the budget allocation criteria have varied over time. In the early years following the RF's establishment, a fixed allocation was followed; later on, the fixed criterion has been replaced by a variable mechanism grounded on the length of the roads managed at each administration level. The criterion is in force for a three years period and is then updated, the current allocation is as follows:

Federal roads 65%, Rural Roads 25% and Selected Municipal Roads 10%¹⁴.

The RF Board assigns a maintenance budget to each Regional State for the activities under its responsibility (length of roads starting and ending within the State's boundary). This leads to the current budget allocation of about 65% of the total planned amount to ERA, which is responsible for federal roads. Once defined the total amount for each Regional State, the latter provides to RF a detailed program assigning the given budget for specific maintenance works. This program is mandatory and audited by the Federal level; the States cannot divert funds from a maintenance line to another without authorization. In case of lack of funding, States can call the Government for further funds. The Government decides whether assign or not the funds according to the status of public finance and in case of justified needs of further works.

It is easy to understand that the above criterion is based on a pure administrative parameter and does not take into account any diagnosis of the real status of roads. In other words, no asset management system is currently guiding the road maintenance process. Progress on these issues are expected from the outcomes of two projects currently ongoing. The Road Functional Classification study, under review at ERA, is expected to address the allocation of responsibilities of each physical part of the network. Besides, the Federal Roads Master Plan study should identify projects to be implemented at all administrative levels (ERA, regional, and district) for the next ten years.

Next to the development of the Federal Road network, a first nucleus of toll motorways system is now operating in the country. The expressways currently open are the terminal sections along the corridor Addis Ababa - Djibouti (sections Addis Ababa - Adama and Dire Dawa - Dewele) while the central sections are under planning/designing stage with the exception of Adama – Awash which is now under construction.

In case of a toll mechanism adoption these infrastructures should finance their operating cost (first of all maintenance costs) mainly through tolls collection. The introduction of similar schemes is a step which can help the participation of private operators in the financing of road network development, for instance through Public Private Partnership schemes. In this case cost and revenues

arising from roads utilisation are bind and devoted both to investment's repayment and operational costs coverage.

The regulatory framework has been consequently enriched by a specific Proclamation (No 843-2014) establishing the Toll Roads, while a related Regulation (No 310-2014) created the Ethiopian Toll Roads Enterprise under the supervision of MoTL. Accordingly, the collection of road tolls fees has been shifted from ERA to ETRE.

Besides this sectoral intervention, the PPP approach has been introduced into the Ethiopian legal framework (as described in 2.1.3) and both ERA and ETRE could act as the public part (i.e. the contracting authority) of the PPP contract which regulates rights and duties of the parties. Under Ethiopian institutional arrangement, ERA is responsible for the construction, maintenance, and administration of all Federal roads with some exceptions to toll roads. In respect of toll roads, ERA is still responsible for the construction of them; however, once the construction is completed, ERA shall transfer its administration and maintenance responsibilities to ETRE. Therefore, both ERA or ETRE could be a "Contracting Authority" for a toll road PPP contract as per the PPP proclamation.

Coming to the process of infrastructure providing at Regional States level, it has been said that the command chain originates from the regional government and passes through the Regional Road Authorities (RRAs) which has powers on the roads that originate and end within the regional borders. Therefore, these competences are mirroring the ERA's, though on a territorially limited level. Below the regional level (Woreda level) the Woreda Road Offices (WRO) represent the administrative and technical contact point for the rural roads.

The financing of roads constructions at local level comes from Federal budget and from international development banks. As for the domestic budgeting process, in general the Federal level set funding transfers to Regional States without any specific target; each Regional State decides on the bases of its own needs the sectoral budget allocation.

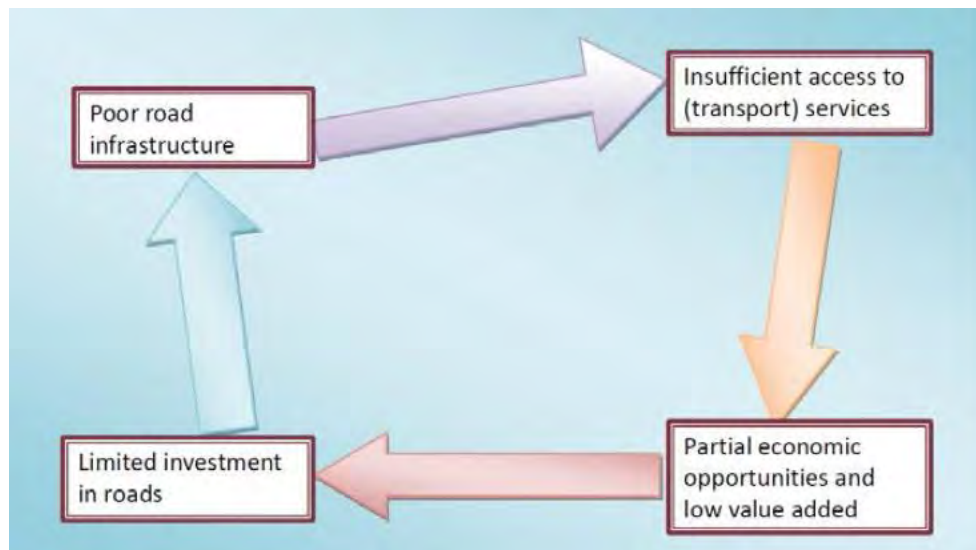
The development of local connectivity is a pillar of the infrastructure delivery. The Universal Rural Roads Access Program (URRAP) has been launched by the Ethiopian Government to connect all Kebeles by standard and affordable all-weather roads to guarantee a yearly based access. The aim of the program is to provide one of the tools to eradicate poverty from the country, by escaping from the "rural transport

¹⁴ AAAU-EiABC (Ethiopian Institute of Architecture, Building Construction and City Development), Gap Assessment Report for FDRE - Office of Road Fund, March 2021

trap" (see Figure below) that affects many underdeveloped countries¹⁵.

15 G. Raballand, P. Macchi, C. Petracco , Rural road investment efficiency: *Lessons from Burkina Faso, Cameroon, and Uganda*. The World Bank, 2010

Figure 3: The rural transport trap: rationale of URRAP Program



Source W.T. Consult P.L.C. Consultancy services for impact assessment of URRAP Program

The URRAP program certainly contributed to the growth of road accessibility but, according with ERA, the ability to complete the planned works is, respectively, at 53% (quantity parameter) and 61% (disbursement) of the plan¹⁶. As maintenance is concerned, the disbursement is at 20% of the planned budget. This very partial accomplishment of the targets is caused by a number of critical factors that hampers the full operability of civil works at local level. These critical factors have been identified and scrutinised both by the interviews and many sources and are reported in the following list:

- Capacity Gap
- Fast turnover of skilled workforce
- Lack of funding
- Failures in procurement process
- Quantity/Quality failures of construction equipment
- Delay of Project Handover
- Relationship between Consultants and Contractors
- Rent Seeking Behaviour
- Community Participation/contribution
- Reporting and Documenting

It is easy to see that the factors can be grouped in three critical areas: i) Financial resources, ii) Capacity skills and iii) Organization/Coordination issues.

Financial resources

The lack of funding seems to have at least two driver factors: cost increasing compared to the planned level (delays in civil works, increasing costs of the equipment/spare parts) and poor quality of works.

Capacity

Workforce skills are a huge factor of inefficiency. This influences all phases of the construction/maintenance process and influences many key roles of the process itself: from design to procurement, from project management to execution. In addition, this scenario is often made worse by a rapid change in the skilled workforce.

Organization/Coordination

Bad functioning of organizational processes and coordination activities (internal and between stakeholders) are among the most widespread critical issues in the field of infrastructures. It is therefore not surprising if they also occur in this case. The lack of coordination, both between central and peripheral entities (ERA, RRAs, Regional Governments) and between different actors with different roles (public officials, consultants, contractors) influence the performance of activities in different ways. For example, in case of new professional figures, they must be trained and framed in the organizations, providing, together with an adequate remuneration level, also an attractive career path.

Summing up the situation for infrastructure providing, the table below describes how the

¹⁶ ERA, Road Sector Development Program , 22 Years Performance Assessment Report, 2020.

main functions are allocated at federal and regional states levels.

Table 5: Allocation of responsibilities on the road sub sector - Infrastructure

Function	Federal Roads		Regional & Rural Roads	
	Construction	Maintenance	Construction	Maintenance
Overall Supervision	MoTL	MoTL	RG	RG
Allocating Finance	MoF	RF + MoF	RG	RF + RG
Formulating Policy	MoT, ERA	MoTL, ERA	RRA	RRA
Annual Plan & Executions	ERA	ERA	RRA	RRA
Delivery of works	ECWC, Private Companies	ECWC, Private Companies	RPE, Private Companies	RPE, Private Companies

MoTL= Ministry of Transport and Logistics, MoF=Ministry of Finance; ERA = Ethiopian Roads Authority, ECWC = Ethiopian Construction Works Corporation; RF = Road Fund; RG = Regional Government; RRA = Regional Road Authority; RPE = Regional Public Enterprises.

As Road Transport services are concerned, according with Proclamation No 468-2005, the provision of transport services is allowed to licensed operators, both public and private. They have to act in compliance with the rules issued by the competent authorities, for instance the Proc. No. 547/2007 which states the conditions for the Carriage of Goods by Land, by repealing the old provisions on the matter issued by the Commercial Code of Ethiopia.

The licensing authority was the former Federal Transport Authority (FTA), established by the Proc. No 468-2005, originally in charge of all transport modes licensing (excluding air services). Afterwards FTA has progressively lost its duties as sub sectoral reforms went into force or by the establishing of specialised agencies. According to the new Proc. No 1263 2021 FTA has been repealed and merged within the MoTL, which has taken back its powers and duties.

Former FTA was in charge of the road transport organization in the country, both for passengers and freight. Its powers and duties are large, covering a large spectrum of issues, from administrative (individual/enterprise authorizations, vehicle registrations, driving license requirements and process, insurance enforcement) to technical ones (certification of technical competences, vehicles compliance and inspections, manufacturing and import, requirements of terminals), from economic (tariffs authorisation, services' organizations) to emergency actions (transport emergency and recovery plans).

As the case of infrastructure providing, for transport services occurs the same division of powers between Federal level and Regional States, the following table describes the allocations of the main functions.

Table 6: Allocation of responsibilities on the road sub sector - Services providing

Specific Issue	Federal Government	Regional Governments
› Driving License	› Enacting law › Supervising the proper implementation of the law by Regional Governments, › Issuing Federal Driving License	› Enforcing law › Issuing Regional Driving Licenses
› Vehicle Regulation	› Enacting law › Enforcing law on all imported and locally manufactured vehicles › Enforcing law on Cross Country Public and Freight Transport vehicles	› Enforcing law on vehicles registered and licensed by them.
› Speed	› Enacting law › Enforcing law on Federal Tall Roads	› Enforcing law on both Federal and Regional Roads
› Axle Load Enforcement and Weight Stations	› Enacting law › Enforcing law on Federal Roads	› Enforcing law on Regional Roads
› Cross Country Public and Freight Transport Services	› Both enacting and enforcing law	› None
› Regional Public and Freight Transport	› None	› Both enacting and enforcing laws governing services under their state

Specific Issue	Federal Government	Regional Governments
Services		boundary
> General road users' regulations	> Enacting regulations	> Enacting additional road users' Regulation > Enforcing both the Federal and Regional State Regulations
> Safety	> Enacting laws and issuing strategies	> Planning and executing safety activities

It is easy to observe a logical division of responsibilities, with each level being responsible for issuing and enforcing the regulations that fall within its scope. However, as mobility phenomena are precisely characterized by flexibility and displacement, some coordination and enforcement issues arise in this administrative area.

The former FTA, now merged within the MoTL, was in charge of a great number of tasks, regulating cross-country and cross-border transport services (both freight and passenger), while Drivers' Licenses and Vehicle Registrations are managed and issued by the ten regional States and two chartered cities, Regional Transport Bureaus. Although there are common procedures, standards and criteria for the issuance of licenses and permits, no means to effectively enforce them within regions, and particularly across regional boundaries.

The case of the driving licenses is an example. The existence of three kinds of driving licenses (the one issued prior to Proc. No. 600-2008, another one that issued in accordance with Proc. No. 600-2008, and finally the one which is currently been issuing in line with the provisions of Proc. 1074-2018) can generate confusion in law enforcement. At the same time, given the same basic principles for the issuing of a license, some Regional States are tighter than others in applying it. Besides, the States' Traffic Polices often apply the law in different ways. Eventually, the lack of a ICT system able to monitor licenses and penalties on a national scale, is a real hamper to a uniform enforcement of the rules.

A recent study concluded that the current Ethiopian legislation in road transport is generally compliant and comprehensive in terms of the rules of the road and minor changes needs to be made in order to be fully compliant with the requirements of the Vienna Convention, but the main problem is on ensuring that the rules legislated are complied with, through both law enforcement, training of drivers and the general public, and the implementation of quality systems. In fact:

The current **vehicle registration process** complies with the requirements of the Convention but the vehicle registration

certificate is non-compliant and will need to be amended;

- a) Annual **vehicle inspection** is legislated but no legislation dictates the technical requirements of vehicles nor the pass requirements of the vehicle inspection.
- b) The current Ethiopian legislation is generally compliant relating to obtaining **learner and driving licences** and regulating the issuing thereof, but the current driving licence card and categories are non-compliant and will need to be amended.
- c) The declaration to consider **mopeds as motorcycles** should either be applied to all parts of the legislation and a notification made to the UN upon accession, or the unique requirements applicable to mopeds must be legislated.

As far as passengers' public services are concerned, given the regime of market openness subject to licensing authorization, the role of public enterprises is not so extensive as in other fields. Ethiopia can presently count on 16 regional bus terminals, 13 urban centres with mass-transport services, 224 regular extra-urban bus routes and a total of 772 million annual flow of passenger on public transport. Services of different level of quality/tariffs are provided by public and private operators.

In the Capital City the Regulation No. 298-2013 (and its amendment by Regulation No. 362-2015) established the Public Service Employee's Transport Service Enterprise (PSETSE) with the aim to provide transport services to federal and Addis Ababa public employees during the public offices' working hour and to provide services to all citizens outside that period. The company is accountable to MoTL.

Besides PSETSE there are two public companies providing public transport services, Anbessa City Bus Service Enterprise and Sheger Mass Transport Enterprise, which are accountable to the Addis Ababa City Manager's Office, and the Transport Bureau of Addis Ababa City Administration (a more detailed description is given in 2.8.7).

To complete the picture, it is necessary to mention the "informal" supply of transport services. This is a very widespread phenomenon, in most cities not

only in Africa but also in Asia and Latin America, in situations where the structured public transport model is ineffective and/or unattractive. The so called "Paratransit sector" includes formal and informal transportation services provided by operators seeking profit maximization in a non-highly regulated system¹⁷. In Addis Ababa Paratransit is regulated by the City Administration which set the market entry rules and the routes to be operated.

For international passenger services, Ethiopia has so far signed two agreements with Sudan and Djibouti for providing necessary framework for passenger road transport services between Addis Ababa and their respective capital city. The Agreement signed with Sudan on 4th of December 2013 was ratified by House of People's Representative on 23rd of May, 2017 (Proc. No. 1009-2017). Similarly, the Agreement signed with Djibouti on 7th of February 2015 was ratified on 2nd of November 2017 by Proc No. 1055-2017.

In a broader sense international services have to be considered within the framework of the multi-country treaties inked by the country. This has a particular meaning for road freight transport which is supposed to ensure the commercial flows between Ethiopia and the neighbouring countries. On this matter the reference is the Tripartite Free Area (TFA) which aims at establish a regime of free flows on commercial basis among the common market for Eastern and Southern Africa (COMESA), the East African Community (EAC) and the Southern African Development Community (SADC).

It is easy to understand how crucial can be the role of road freight services to reach the objective of this agreement. In fact, the lack of an integrated and liberalised road transport market in the East and Southern African (EA-SA) region hampers the trade flows by causing severe delays and increased transport costs, as well as challenges to road safety. The tripartite members agreed on the prioritisation of infrastructure development in the region through their respective treaties, protocols and agreement as part of the comprehensive Tripartite Transport and Transit Facilitation Programme (TTTFP). In 2018 a Multilateral Cross-Border Road Transport Agreement (MCBRTA) has been signed. The agreement aims at achieve "the integrated and

seamless movement of goods and persons in the Tripartite Region with a view to reducing transportation costs and transit times in order to increase the competitiveness of goods produced in the Eastern and Southern African Region for distribution in regional and international markets"¹⁸.

The main obstacle to be faced basically concern a common regulatory framework which requires harmonisation/adjustment actions of the countries involved. The most important issues to be faced are as follows:

- implementation of an Integrated Transport Registers and Information Platform and System,
- harmonization of Vehicle Load Management Standards,
- harmonization of Vehicle and Driver Regulations and Standards.

The providing of freight services is organised according with Directive No.35 /2020 (Organizational structure and competency of commercial road freight transport operator's implementation Directive). This act set up the responsibility at administrative levels (MOT, FTA), the ranking of service providers - in accordance with specific dimensional and quality requirements - both as individual, companies or Transport Associations. This latter bodies were been established to enhance the ability of single operators but they are not the only way to undertake the business.

In freight transport, the loading capacity, the number of vehicles with low and midlevel capacities is very limited. The Djibouti corridor has been the main focus of both import and export road freight operations, but the structure of Ethiopian imports has changed over time, from finished and lightweight products to a combination of light finished products and project-bound bulky cargo. This structural change has not been accommodated by a change in the design of the logistics system. The upgrading of the road network needs to go hand in hand with the acquisition of trucks of the right length and quality. There are much fewer trucks, both private and state-owned, than the required weight of goods to be lifted. However, the existing trucks that are old and light in weight do not match the heavy and bulky cargo. As a consequence, overloading of trucks is common on the Ethiopian road

¹⁷ Agence Française de Développement, CODATU, Paratransit: a key element in a dual system, Oct 2015; G. Lesteven, V. Boutueil, Is Paratransit A Key Asset For A Sustainable Urban Mobility System? Insights From Three African Cities. 97th Annual Meeting Transportation Research Board, Jan 2018, Washington, United States.

¹⁸ COMESA – EAC – SADC TRIPARTITE, Multilateral Cross-Border Road Transport Agreement (MCBRTA), Rev 3.4 Oct 2018. Somalia is not included in the agreement.

network and this leads to the destruction of roads and bridges.

Given the mixed regime in force in the country (public and private providing) the prices of

transport services are established according to the kind of service concerned. In the following table is given an overview of the responsibilities regarding prices and tariffs of the transport services.

Table 7: Tariffs responsibilities for the road transport services

Types of the Service	Tariff establishing
Regular cross-country/International public transport services	Federal Government (FTA)
"Special" cross-country public transport services	Market
Urban and intra-city (within the same regional state) public transport services	Regional Governments
Cross Country Public and Freight Transport Services	Market
Freight transport services	Market
Fuel Transport services	Federal Government (Ministry of Trade & Industry)

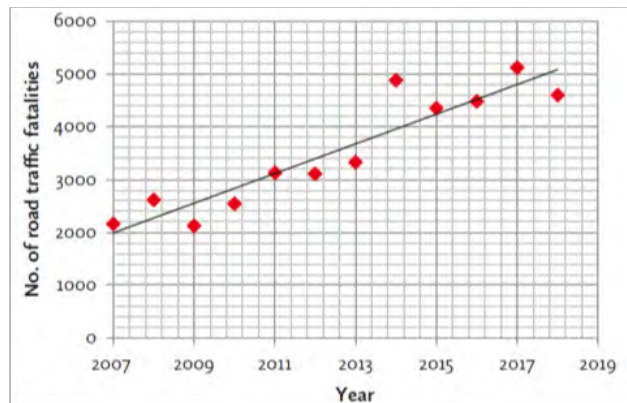
The crucial role of road transport in the country has required the development of an insurance system able of growing at the same speed as vehicles spread and to manage the economic consequences of road accidents. To this purpose the Proclamation No 799-2013 states the Insurance policy of the country and provides a mandatory third-party risk insurance for all registered vehicles. Accordingly, Regulation No 300-2013 established the Insurance Fund Administration Agency by replacing the former Office of the Insurance Fund.

After the reorganization of Government's powers and duties, the MoTL is reviewing its internal structure. On the road safety topic, the idea is to

establish a dedicated federal agency responsible for all road safety activities, vehicle and driving licensing standards, the Road Safety & Insurance Fund Service.

The safety issue is crucial for the road sector in Ethiopia. The increase of accidents and fatalities that followed the growth of motorization rate in the country, despite the latter it is not as high in absolute terms, called for focused strategies to tackle and, possibly, prevent a huge future increase of accidents. The figure below describes the evolution of road traffic fatalities from 2007 to 2018, based on the data recorded by the Federal Police Commission and published by the UN.

Figure 4: Road traffic accidents in Ethiopia 2007-2018



Source: UN Economic Commission for Africa. Road safety performance Review - Ethiopia

It is easy to see that the victims of road accident increased linearly with a doubling of victims between 2007 and 2015 and further increases in

the next years. During the last period a decrease occurred in the accidents' trend, as the following data shows.

Table 8: Road accidents in Ethiopia 2018/19 - 2019/20

Ethiopia	Death			Heavy Injury			Light Injury		
	2011	2012	%	2011	2012	%	2011	2012	%
Total	4597	4133	-10,1	7407	6929	-6,5	5949	5247	-11,8

Source: National Road Safety Council's Office, Ministry of Transport

The table describes the situation for the two available years, showing something that could be

seen as a slowdown in the growth trend. Apart from the interpretation of the data of the last two

years, the number of accidents and deaths due to road traffic are not in line with a country that intends to project itself among the middle-income countries.

There are many converging factors behind the magnitude of the issue: beyond the increase in motorization, other factors are vehicle age, poor road conditions, large share of pedestrian mobility, lack of centralized database for registering and regulating drivers and vehicles, low awareness of road safety and regulation by road users, low enforcement capacity due both to lack of capacity and corruption.

In order to coordinate road safety efforts and activities carried out by various governmental institutions and private stakeholders, a National Road Safety Council (NRTSC) has been established by Regulation No. 205/2011 with the aim of developing a common road safety strategy and coordinate its implementation. The Council acts both as a pivotal expertise centre and monitoring/dissemination centre on road safety issues and now it is involved in the reorganization mentioned above aimed at enhance the Government's efforts on road safety.

Beside safety issue¹⁹ other social/environmental issues need to be treated. The first one is represented by road accessibility that is one of the basic requirements to lead the country outside from poverty. As stated before, the huge increase of RAI testifies the progress of the country along this path, nevertheless the current value of the index (60%) shows that there is an important gap to be filled yet.

As far as mobility is concerned, there are positive data on the significant increase in mileage along the road network with an average annual increase of 10.6%. This increase is more or less the same for both passengers and freight vehicles (see para 5.2 for a discussion about this topic). On the other hand, the private motorization is substantially limited to the Addis Ababa area, so that the role of transport public services is more than crucial to ensure the possibility of all Ethiopian citizens to move from their residence to satisfy their primary needs (health, school, work, ...).

Under this point of view the ability of the citizens to access a public service is strictly connected with the quantity and the price of service providing. The current regulatory framework let the operators, both public and private, to decide

the level of services and its quality level, according with their ability to organize the service without profit loss. The role of the public power is to issue commercial license and approve tariffs schemes for passenger services. At the same time, when public enterprises are involved in service providing, federal or regional powers are free to decide to subsidise them or not.

Such a system seems to ensure the economic equilibrium of the operators but probably does not meet the potential demand of mobility. In this area a further effort of public powers to enlarge the accessibility to mobility services could be reached through the adoption of suitable regulatory measures without hampering the private undertakings to participate to the economic activity.

In addition to traditional motorized mobility, the concept of non-motorized mobility is gaining ground. This is particularly important for a country like Ethiopia because it considers at the same time many issues of primary importance such as the share of the fragile population (like children, women, people with disabilities and others) but also of the share of isolated population in the less habited areas. In Ethiopia the share of pedestrian or animal-drawn mobility is very high, due to morphological and economic factors, a focused strategy aiming at reduce these negative elements has an important role.

This is the case of the Non-Motorized Strategy issued by the Government. The strategy is focused on the urban environment and also considers the quality of road design as one of the key factors to be affected, through an adequate review of road design manuals.

The guiding principles of the strategy prepare a rebalancing of the concept of mobility by designing the spaces for both traditional and non-motorized mobility, instead of considering the latter as an ancillary way of moving. The activities vary from the conceptualisation of non-traditional networks, as Pedestrian, Bicycle and Greenway networks, to the design review of streets, intersections, street lighting, to the management of Parking, Vendor Street, Animal-drawn vehicles.

This kind of strategy was centred on former FTA and involves all the chain of public powers, from Governments' level to City level, passing through ERA at national and district offices level, Regional administrations, RRA's, Federal and local police.

Railways.

Railway Transport Administration Proclamation No. 1048/2017 is the principal law that governs

¹⁹ The legal framework of dangerous goods' transport is described in sub chapter 2.5.

and regulated the Railway Sector in Ethiopia. The Proclamation is also a foundation for future regulations and directives that may be issued by the Council of Ministers (CoM) and by the Ministry of Transport (MoT) respectively.

Similar with other transport sectors, MoTL is responsible for proposing policy, strategies and laws concerning railway transport sector as well as for preparing national railway infrastructure master plans. In addition, MoTL is given a responsibility of regulating the sector by providing licenses for all rail constructions carried out by private investors as well as registering the main actors of the sector – namely infrastructure managers and railway undertakings.

MoT is also responsible for economic regulation with a power and duty to ensure the transport tariffs set for passengers and goods are competitive and fair. For achieving this objective, both the infrastructure manager and railway undertaking are required by law to submit their tariff proposal with the condition of their services for approval to MoTL. They shall not implement any tariff without a prior approval of the Ministry. MoTL has given a power to either approve or amend if it gets necessary.

The Ministry has additional responsibilities because of the absence of an independent government organ responsible for the safety of the railway transport sector. On the basis of a project financed by the World Bank and already concluded, the Railway Directorate will be structured and strengthened to manage railway safety and, at a later stage, will likely be the basis for a future Railway Agency with legal personality.

The Proclamation authorize the “body authorized by law to administer railway transport” to have a power and duties to carry out all the regulatory functions for ensuring the railway transport is safe and reliable. Sub-Article 43 of Article 2 of the Proclamation defines the “body authorized by law to administer railway transport” as the Ministry of Transport or another government organ as may be determined by Council of Ministers. So far, no Council of Minister’s Regulation has been enacted to determine a government organ to exercise these responsibilities. Therefore, currently, MoTL is still the only regulator of the railway transport sector.

For regulating the sector and ensuring safety of the railway transport, the Proclamation provides the following requirements:

for locomotive and wagon – they shall be registered and have put in-service license to be used in Ethiopia.

for railway professionals: train master, maintenance manager, trainer, examiner, train dispatcher, assessor, and a safety management system manager shall register at the national registry, have Competency License which shall be renewed every three years.

for train masters: they need to have two licenses - train master competency license and supplementary train master certificate

for Infrastructure Managers: they shall get a Safety Authorization by meeting the requirements

for Railway Undertakings: they need to get a Safety Certificate by meeting the requirements

For training, maintenance, and assessment institutions – they shall get Accreditation Certificate to engage in railway sector.

The Proclamation also requires both the infrastructure manager and railway undertaking to submit their Safety Management System and get approval for it from the regulator. The minimum content and the form Safety Management System is provided by the Proclamation. Any Construction or development activity undertaken around railway infrastructures shall obtain prior permission from the regulator. The MoTL is also authorized to appoint audit and inspection officers who perform safety audits and inspection of the proper application of the relevant laws.

The Proclamation requires all persons, whether natural or legal, that involve in - construction, maintenance, and management of railway infrastructure, providing railway transport services, providing training for railway professionals, manufacturing train and other equipment used for the construction/maintenance of railway infrastructure, providing consultancy service in the railway sector - to be registered, licensed, and/or accredited by “the regulator.

Note: During the preparation of the Proclamation, the following Regulations and Directives to be issued by the Council of Ministers and MoTL respectively have been identified.

A - ISSUES NEED TO BE COVERED BY COUNCIL OF MINISTERS’ REGULATIONS:

- a. to determine other infrastructures connected with railway infrastructure those may also need a license before putting them into service;

- b. to decide other professions related with a railway transport to be qualified for registration in accordance with this Proclamation;
- c. manner of provision of railway transport service by using a railway infrastructure of another person based on a contractual agreement entered with the infrastructure manager;
- d. the technical and quality standards required to be fulfilled by trains and railway infrastructures shall be determined by regulations;
- e. the Ethiopian safety requirements, rules and working procedures be fulfilled by trains and railway infrastructures;
- f. Conditions under which activities undertaken around the railway infrastructure that endanger the safety of railway transport service shall be prohibited or restricted
- g. Conditions under which constructions and development activities undertaken around rail way infrastructures shall have permission issued by the authority
- h. conditions on which authorization may be granted before undertaking other related development activities on lands adjacent to railway infrastructure or train stations;
- i. conditions on which construction of other infrastructures undertaken crossing or over passing or parallel to railway infrastructures;
- j. condition on which any excavation and construction that are undertaken near by the railway infrastructures;
- k. condition in which dangerous goods can be transported by train;

B - ISSUES NEEDS TO BE COVERED BY DIRECTIVES ISSUED BY MOT

- a. the detail requirements for issuance of competency license for every railway work shall be determined by a directive;
- b. additional requirements to be met for railway infrastructure manger safety authorization;
- c. the conditions under which safety authorization to be re-issued if a change is made on the railway infrastructure,
- d. detailed requirements that shall be fulfilled by the training institutes to obtain accreditation certificate;
- e. conditions for acceptance of a training qualification document obtained from a foreign training institution;
- f. detailed requirements that shall be fulfilled by maintenance institutions to obtain accreditation certificate;
- g. detailed requirements to issue accreditation certificate for assessment institutions which assess railway work's professionals;
- h. detailed requirements that shall be fulfilled to obtain accreditation certificate pursuant to Article 22 of the Proclamation;
- i. detailed requirements that shall be fulfilled to obtain accreditation certificate for training centres;
- j. conditions in which any institution whose head office or branch offices are outside Ethiopia may assess and provide professional witness on the technical and safety capacity of a train or one or more than one railway infrastructure parts which will be put in service in Ethiopia;
- k. conditions of suspension or cancelation of the accreditation certificate;
- l. safety management system, conditions which oblige to make amendment on the safety management system and time, condition and form in which the performance of safety management system is reported;

[from DMP 2.4.2 rail companies]

Currently, three (3) companies are engaged in the Ethiopian railway sector in various missions:

Old Narrow gauge Railway (Chemin de Fer Djibouto-Éthiopien (C.D.E.) ,

Ethiopian Railways Corporation (ERC)

Ethio-Djibouti Standard Gauge Railways (EDR)

Currently, C.D.E. operate the service basic related livelihoods and social services in 18 small stations from Dire Dawa to Gilile. The organization provide infrastructure management and transportation services in Ethiopia and Djibouti but the agreement between the two countries will end in 2023.

The Ethiopian Railways Corporation, established by the Council of Ministers Regulation No. 141/2000, is a state-owned enterprise owned by the Government of Ethiopia.

To build rail transport infrastructure;

To provide passenger and freight rail services and

Perform related activities necessary to achieve the purpose for which it was established

The corporation has so far completed the construction of Sebeta-Dewale and put it into service. the Awash- Kombocha – Haragebeya line is under construction. In addition, the construction of Addis Ababa Light Rail Transit Service has been completed and is currently providing passengers services. In terms of operation, the corporation currently manages the Addis Ababa Light Rail Transit Service after the expiration of a management contract signed with the Shenzhen Metro Group/China Railway Group (CREC) JV to support the start up phase of the services. For the Sebeta-Dewale railway line, the

infrastructure management and rail transport services are being carried out by EDR.

Ethio-Djibouti Standard Gauge Railway Share Company (EDR) is an institution established to provide freight and passenger services on the new standard gauge line between Ethiopia and Djibouti. Since its inception, the company has been providing passenger and freight services on the line through a management contract signed with a JV between CREC and China Civil Engineering Construction Corporation (CRCC).

All the companies work under the rules and regulation issued by the government of Ethiopia and in particular by MoTL which has established a specific department acting as Safety Regulatory Agency.

Logistics and Maritime.

Regulating/administrating the Logistics and Maritime sector is under the responsibility of the Federal Government through Ethiopian Maritime Affairs Administration Authority (EMAA, now Ethiopian Maritime Authority EMA). MoTL is, as all other transport sub-sectors, responsible for formulating policy, emanating legal framework, and supervising the performance of EMA (former FTA, now MoTL is responsible for regulating international as well as cross-country freight transport).

As a landlocked country, the importance of the sea connections for the Ethiopian trade flows is huge. The logistics issue is, in turn, strictly linked with the collection and delivery of import/export flows and, for this reason, all the activities related to this are under the same administrative/regulation chain and have a unique public enterprise as the main market actor.

Among others, the main specific laws that governs the logistics process as a whole are: Carriage of Goods by Land (Proc No 547-2007), Multimodal Transport (Proc No 548-2007), Maritime Sector Administration (Proc No. 549/2007), Dry port (Proc. No 588-2008), Truck demurrage (Proc. No 811-2013).

Before the establishment of EMAA, the regulation and licensing functions were done both by a department under MoTL and by the former FTA. One of the missions given to EMA by the Proclamation is to ensure the economic viability of transport flows both for import and export and to reduce the transit times. Moreover, EMA is in charge to plan and coordinate such operations, also by the coordination of Government bodies involved and to implement the Country's rights and obligation under the international maritime

conventions. The federal government is responsible for financing the regulatory functions of the sector by allocating annual budget.

Following an in-depth examination of the logistics sector, which resulted in the elaboration of a National Logistics Strategy, a high-level tool for coordinating national sector policies was recently established, the National Logistics Council (NLC). The Council is supported by a dedicated office, the Logistics Transformation Office (LTO).

The composition of the NLC is as follows:

the Prime Minister Office,
Ministry of Transport,
Ministry of Trade and Industry,
Ministry of Finance,
Ministry of Agriculture,
National Bank of Ethiopia,
Ethiopia Maritime Affairs Authority,
Ethiopia Investment Commission,
Ethiopia Revenue and Customs Authority,
Ethiopian Logistics Community of Practice.

The Council does not have the task of technical regulation or management of daily administrative processes, but to coordinate all the stakeholders active in the sector in order to develop intervention policies and strategies capable of rapidly advancing the national logistic sector.

The Ethiopian Shipping and Logistics Services Enterprise (ESLSE), established by the Regulation No 255-2011, is the public enterprise engaged in shipping, freight forwarding, and owning and administrating dry ports and sea vessels. Its areas of activity can be summarised as follows:

Shipping operations and vessel ownership,
Multimodal operations (transit services, freight forwarding, stevedoring, etc),
Dry port operations and ownership,
Road freight transport and truck ownership

The basic laws governing the entire logistic process were grounded in 2007 by three proclamations issued simultaneously: Carriage of goods by land, Multimodal Transport and Maritime Administration.

The first act defines, among other, the transport contract of goods by land and the consignment notes, repealing the previous provisions of Title I of Book III of the Commercial Code of Ethiopia.

The second law aims at provide a legal framework regulating duties and liabilities of

parties to a multimodal transport contract, setting the related basic definitions: International Multimodal Transport, Multimodal Transport Operator, Multimodal Transport Contract and Multimodal Transport Document.

The third law, establishing the administrative agency for maritime activities, reaffirms, among other things, a definition of multimodal transport as an activity on international scale.

These basic definitions set a distinction between unimodal and multimodal transport. Given the material condition of the country and following the intentions of the Ethiopian lawmakers the multimodal transport is intrinsically an international event.

In case of unimodal transport, services can be provided both by private or public companies, subject to the compliance with authorisation and licensing regime in force for the Road sub-sector regulated by former FTA and RTAs. A similar rule is in force for railway services.

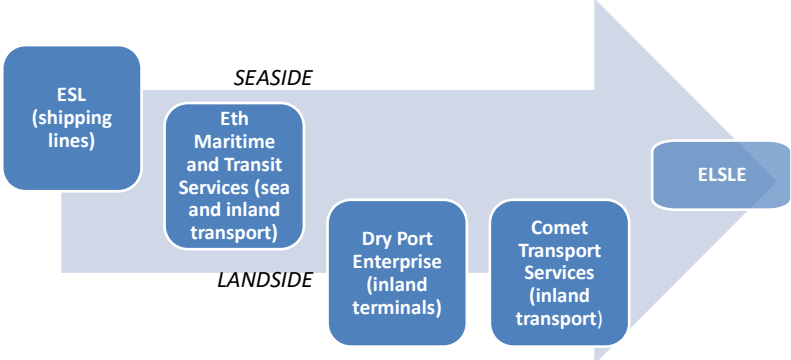
Coming to multimodal transport, though no clear restriction provided by the specific proclamation (548-2007) does exist, until today no single private operator has been engaged in a multimodal transport service. Directives issued both by MoTL and the National Bank of Ethiopia in 2008 and 2012, on one hand required all government institutions and private importers to use ESLSE's ships for their imports and, moreover, mandate all operators using multimodal

transport to deliver their cargoes to dry ports or warehouses authorized by the former Customs Authority (now the Ministry of Revenues). These provisions, aiming both at control foreign currency and streamline shipments from Djibouti (avoiding the foreign currency fees related to the shipments) had the practical outcome to obstruct the access of the private operators to the market of multimodal services, apparently without intentions.

With the establishment of the NLC the lack of a focused commitment on the development of multimodal transport and, on a wider scale, on the sector should be come to an end. In fact, all the main logistics stakeholders are represented within the Council and the guidelines that will be issued should reflect the main interests of the Country.

The Regulation No 255-2011 established the public enterprise ESLSE and, at the same time, repealed the previous regulations concerning the former public companies in charge of service providing along the logistics chain, which were merged into the new enterprise. The current structure of the company is the outcome of many changes occurred during the last fifty years. Starting from the establishment of the national maritime company (Ethiopian Shipping Lines), the chosen approach has been similar to that of the aviation sub sector, with a reinforcement of the public control and a progressive widening of the scope of the company.

Figure 5: Evolution of the logistics and shipping business' structure



The path is depicted in the scheme above, with the company enlarging its scope from maritime to sea terminal services and then to inland forwarding, eventually becoming a totally state-owned enterprise acting along the most important logistic chains of the country. Presently the company is accountable to the Ministry of Finance through the PEHA.

Regarding inland water transport, services are mainly provided on the western and southern

part of the country, with some river basins and lakes (mostly Lake Tana and Baro River) which group the present and potential services concerned.

According with the Maritime Proclamation (549-2007) the power to regulate the inland water transport is given to EMA. However, in practice, EMA gives more attention into the maritime part of transportation and Regional Transport Bureaus are now fully regulating the sub-sector. Based on

the opinions collected through the interviews, when the investment programs enhancing the inland waterways services will be completed, part of the responsibilities will be leaved to Regional states while the rest will remain at national level.

As far as transportation of dangerous goods is concerned, there is no specific law that rules this matter. Trucks involved in transporting import-export goods are licensed and regulated by Federal Transport Authority. There are three laws, namely, Radiation and Nuclear Protection Proclamation No. 1025-2017 and the aforementioned Carriage of Goods by Land, and Multimodal Transport that have provisions relevant to the transportation of dangerous goods.

The main objective of Proclamation No. 547-2007 is generally to govern contracts for the carriage of goods by motor vehicles, railway, and vehicles in internal water. For this objective, it provides definition for dangerous goods (Art. 2) as “goods which at classified as hazardous as well as Goods which are or may become of dangerous, inflammable, radioactive, noxious or damaging nature, and comprises all that are potentially hazardous for human beings and the environment.” As per the Proclamation, any sender of dangerous goods shall have an obligation to inform the carrier the exact nature of the danger and indicate the precautions needed to be taken. If the sender fails to do so, the carrier may at any time and place to unloaded, destroyed or rendered the dangerous goods harmless.

Following this provision, the Proclamation No 548-2007 states (Art. 30) that in case the shipper fails to inform the multimodal operator about the nature of (dangerous) goods, the shipper shall be liable for all the losses resulting from the shipment and/or the goods may unload, destroyed or rendered innocuous without payment of compensation.

Besides, Proclamation No. 1025-2017 prohibited transportation of any radioactive material “except in accordance with the requirements, established by the Authority”. Any transporter is also required to apply and get license in advance from the Authority to transport any radioactive material. Falling to do so is punishable by three to fifteen years imprisonment.

The vital role for the country of the Logistics and Maritime sector makes any inefficiency, lack of performance or failure directly impacting on factors that are crucial for the development but also for the day-by-day activities.

A deep assessment of the sector has been conducted by the Government and the results have been published in a focused document, the National Logistics Strategy²⁰. The main outcomes concerning governance, administrative and regulations issues can be summarised as follows.

In terms of Transit and Customs procedures:

the time required to deliver cargo at inland destinations (procedures of releasing cargo at seaport, inland haulage and clearance at inland customs) appear minimal on paper, but the process actually takes longer time due to complex customs procedures and related systems;

there are many actors involved in this process (freight forwarders, shipping companies, port terminal operators, customs authorities of both Ethiopia and transit countries, border control and other related agencies). Each of them imposes his needs, standards and charges in an uncoordinated way. The total result are excessive and cumbersome procedures that hamper the process.

In terms of Quality, Competence and Capacity of Institutions and economic operators:

there is poor quality/competence of personnel service providers, with training programs that have failed to carry out adequate knowledge to trainees;

all actors in the supply chain show inadequacy in institutional organization and in the ability to lead the sector with the relevant knowledge and skills

the lack of qualified professionals in the logistics chain (both private and public side) and of national and port logistics service providers has been identified as one of the factors hindering the sector

there is no legal basis for horizontal coordination between logistical institutions.

In terms of access to Market and role of private operators the assessment enlighten that the main part of the logistics chain is managed on a monopolistic basis, in fact:

on Djibouti side, monopolistic operators act in container terminal management, bulk cargo operation terminal and oil terminal;

on Ethiopia side, monopolistic role of ESLSE for import cargo (though not all the activities) multimodal operation and dry port services.

²⁰ FDRE - National Logistics Strategy, September 2019.

These services are not open to private operators and do not provide services on a quality basis. Accordingly, "this led to inefficient operations and a higher increase in service charges. The absence of proper controlling on the logistics service areas and absence of a competitive environment in the logistics service sector have become significant problems in the logistics system".

As stated above, the Investment Regulation No 474-2020 recently issued, changes the regulatory framework of the sector by introducing a partial openness of the market. In details is foreseen that Freight forwarding and Shipping agency services are opened to joint ventures with domestic operators owning shares not exceeding 49%. This new provision, while innovating the business lines opened to the contribution of private operators, on the other hands does not tackle with the main issue of the multimodal transport services, which remain - practically - restricted in favour of ESLSE.

The lack here is an authorization process for multimodal transport services which set requirements to operate, as is requested for unimodal transport. In fact, the law gives to EMMA the power to issue license to multimodal transport operators and supervise them, accordingly, the authority is fully legitimated in providing detailed requirements and procedures for issuing licenses for operators different from ESLSE. A draft of Multimodal Directive has been recently prepared. Its structure is similar to the Unimodal one for the classification of the operators, while the requirements to enter the market are completely different²¹. A mix of dimensional, business and management experiences, workforce qualifications was defined. Considering the situation of domestic operators, the requirements seem to be very strict and cannot be overcome, while international logistics operators, wishing to invest in the country, could, theoretically, be able to access the market.

Moreover a further consideration has to be done concerning the draft above described: the scope of multimodal services fails to consider the domestic dimension which is, conversely, important in view of the railway development and of the possibility to provide intermodal services.

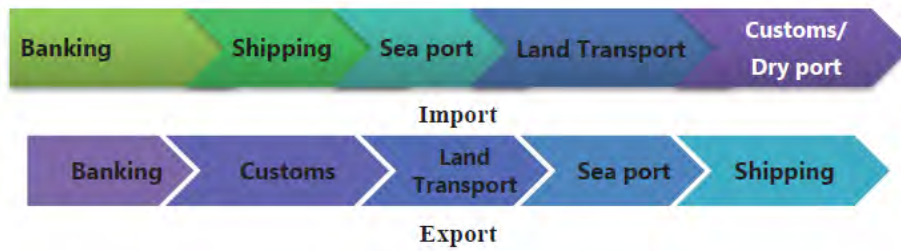
A similar consideration (i.e. a lack of authorization) applies also in case of dry port administration and services providing, though in this case the law (Proc 588-2008) defines, curiously, the dry port as "the enterprise rendering services of dry port within the place designated to render dry port services" (Art. 2)²².

To have a better understanding of this complex situation it is useful to come back to the import/export processes as described in the National Logistic Strategy issued by the MoTL. The figure below describes all the components of the complex processes that are vital to ensure the country's freight flows: transport services (land and sea), terminal services and activities (dry ports, sea ports), administrative, financial and legal services (banking, customs, etc.).

²¹ Ministry of Transport, DRAFT DIRECTIVE FOR PROVIDING BUSINESS LICENSE AND COMPETENCY CERTIFICATE FOR MULTIMODAL TRANSPORT OPERATORS, February 2021

²² On these topics see, for example, T. Kassahun, Trade Facilitation in Ethiopia: The Role of WTO Accession in Domestic Reform, MIZAN LAW REVIEW, Vol. 8, No.1 September 2014.

Figure 6: The Logistics processes for Import and Export



Source: FDRE National Logistics Strategy - September 2019

The Logistics and Maritime sector is fully involved in ensuring the flows of goods needed to national consumptions and economic processes of the country. Besides, national security purposes arises when it comes to the topics of maritime fleet especially, but not only, in case of floods or food emergencies cases. Eventually, the foreign currency concerns for Ethiopia are always on the table, as also reaffirmed by the Economic Growth Reform Agenda. Banking, currency, customs, import supplies, international relationships, are all factors jointly involved in the sector's regulatory framework.

These considerations, summarising the impact on Ethiopia of its status of landlocked country enlighten the role of ESLSE within the logistics chain. In fact, the country has understandable motives for protecting its commercial ships: economic independence and political/national security issue. Commercial profitability is obviously a major criterion for almost all shipowners and if services to be provided to a given country are not enough profitable, the withdrawal or the reduction of the frequency of the service is highly probable. Given this general principle, Ethiopia decided to keep and develop its own shipping industry even if this part of the ESLSE's business is making losses.

The country also has a sound motive to keep (and even to further develop) its shipping industry for political and national security purpose. Since a national security requires adequate fleets for defense transport needs as well as for a secure supply from foreign countries, especially in times of hostility or emergency.

Nevertheless, such a coexistence of multiple objectives (sometimes divergent) imposes to ESLSE a mission and an economic burden which is not officially recognised and defined, forcing the company to adopt a conservative position to maintain its monopolistic role on the whole multimodal chain and finance its losses on maritime side.

As recognised above the monopolistic position of ESLSE, while backed by strategic motivation, seems to hamper the evolution of the whole logistics chain of the country. In fact, the company acts to defend its monopoly position that comes rather from an autarkic approach than from clear economic decision about the efficiency of the sector. To say it in a different way, the present ESLSE is the outcome of a strategic choice of policy makers that seems to have been exhausted, becoming a sort of permanent shortcut that is no more coherent with the new needs of the country.

The issuing of the Home-Grown Economic Agenda and the following establishment of the NLC seem to signal that the development of the sector is addressed beyond of the locked situation described above. Licensing for private multimodal operators is in the pipeline and proposals for dry ports development by private operators have been submitted and this means that the process to allow participation of private operators in the sector seems to have begun.

Aviation.

The Constitution of the Federal Democratic Republic of Ethiopia provides exclusive power to the Federal government pertaining the development, administration, and regulation of aviation sector. Under the Federal government, the Ministry of Transport (MoT) is responsible for formulating policies and initiating laws that govern the sector while the Ethiopian Civil Aviation Authority is responsible for administration and regulation of the sector. Ethiopian Aircraft Accident Investigation Bureau (EAAIB) is responsible for investigating aircraft accidents. Ethiopian Airlines Group (EAG) is responsible for both developing airports and providing air transport services.

Based on the power it gets from the Constitution, the Federal Government has enacted laws for the administration and regulation of the sector as well as established Ethiopian Civil Aviation

Authority, Ethiopian Airlines Group, and Ethiopian Aircraft Accident Investigation Bureau, which are the main actors in the sector. MoTL, as the Federal Government executive organ, has been given the power and duty to provide policy and legal framework for the sector as well as to oversight and supervise ECAA and EAAIB.

ECAA, which was re-established by Proclamation No. 616/2008 (as Amended), is responsible for regulating and administrating the aviation sector safety through safety oversight of air transport operators, airport operators, air navigation service provider and operators of sector. It is also responsible for issuing licenses, certificates, permits, approvals required by laws.

EAAIB was established in 2016 under MoTL by Ethiopian Aircraft Accident and Incident Investigation Proclamation No. 957/2016. Following the standards and recommended practices of Annex 13 of the ICAO convention on international civil aviation, EAAIB is a neutral body. Though established by law, the Bureau is part of the MoTL with having no legal personality by itself like ECAA; however, the Proclamation provides procedures of investigations and respective powers and duties of the Head of the EAAIB and MoTL pertaining to aircraft accident investigations. Before the establishment of EAAIB, aircraft accidents and serious incidents had been investigating by a department organized under ECAA. One of the objectives of the Proclamation 957 is to implement the principle of independence and neutrality given by international safety standards and, accordingly, the task of the new body is "to conduct independent and impartial investigation on aircraft accident and serious incident occurrences".

Ethiopian Airlines Group (EAG), which was established by Council of Ministers' Regulation No. 406/2017, is responsible for both development and management of airports and providing commercial air transport services. EAG was established by merging Ethiopian Airlines Enterprise (which was responsible for providing air transport services) and Ethiopian Airport Enterprise (which was responsible for development, administration, operating of Ethiopian Airports). Following the merger, EAG has become a sole public enterprise operated as both commercial air transport service and airport service provider, reinforcing its (de facto) monopolistic role in the aviation sector and enhancing its competitive positioning on international commercial services not only in the African continent but also worldwide.

Ministry of Finance, through PEHA, is the supervisory of EAG. It is also responsible to allocate budget for air navigation infrastructure development and for regulatory functions carried out by ECAA.

According with the Investment laws recently repealed, air transport services with a seating capacity more than fifty passengers used to be reserved to Government's investments or Joint Governments' Investment. As a result, EAG was in a monopolistic position in providing international air transport services, while domestic air services were opened limitedly to domestic investors.

However, the new Investment Proclamation No. 1180/2020 along with its new Regulation No. 474-2020 has fully liberalized the domestic scheduled and non-scheduled air transport services for Ethiopian nationals and has lifted the seat capacity limitation of aircraft operated by private airlines. The new regulation also allows foreign investors to own up to 49% shares on private companies that operate domestic air transport services. Private investors, both national and foreign, can also invest jointly with the government to provide international air transport services.

The regulation of both the aviation infrastructure and services is under the responsibility of the Federal Government through the Ethiopian Civil Aviation Authority. ECAA powers and duties are extended to include regulating and licensing aviation personnel. ECAA is also delegated by the Investment Proclamation No. 1180/2020 to issue and renewal of air transport investment permits. Providing air traffic, navigation, aeronautical communication and information services is also a responsibility of ECAA.

Moreover, ECAA is also responsible for licensing and regulating operators of air service and general aviation services, determining the conditions under which passengers, goods and mail may be transported by air, prescribing air traffic rules and standards governing the flight of aircraft, ensuring air transport services are safe, expeditious and adequate, registering civil aircraft and any right relating thereto, issuing airworthiness certificates, specifying the type of service to which the aircraft is to be used; prescribing conditions for maintenance and repair of the aircraft.

In addition, Ethiopia is one of the first 52 signatory countries of the ICAO Chicago Convention in 1944. The Ethiopian Civil Aviation Authority has developed the Ethiopian Civil Aviation Authority Rules And Standards (ECARAS) based on ICAO principles.

MoT is also responsible for promoting safety and security standards of the aviation sector as well as monitoring the performance of ECAA. It is the case of the recent Proclamation 1179/2020 amending the aviation Proclamation No. 616/2008 in order to set the alignment of the national aviation safety system to the dynamic of the aviation industry and to the ICAO safety standards.

Safety is the main issue in aviation. All airlines have to provide maximum safety embedded in their services. Ethiopia Airlines suffered a major airplane crash of a Boeing 737 MAX bound to Nairobi in Kenya on March 10, 2019. Due to crucial flight software that was flawed, the aircraft crashed six minutes after take-off and killed all 157 people on board, triggering the global grounding of the 737 MAX. Apart from such bad accident, aviation safety for Ethiopian Airlines can be considered good. Since year 2000, in fact, Ethiopian Airlines recorded 6 accidents. Only in two cases there were casualties: 90 people in 2010 and 157 people in 2019. And accidents were not due to human errors. All other accidents recorded no casualties.

Financing the aviation infrastructure in Ethiopia is a responsibility of federal government through budget allocation. All airport infrastructure developments and air navigation services have been funded by the government, either from government treasury or external loans. Though, fees are paid by users of the airport infrastructure and the air navigation services, these fees are far below to cover the costs of developing and maintaining the infrastructures.

Differently, the aviation services are fully financed by the revenue generated from provision of the services. The main service provider, EAG is a 100% self-financed public enterprise. As stated above, financing aviation infrastructure is a government responsibility. However, following the acquiring of the Ethiopian Airport Enterprise

by Ethiopian Airlines Enterprise, there is no clarity whether the government will continue to finance the development of airports or EAG will cover such costs by itself, as it does for the services. Some may suggest both government and EAG may jointly cover the finance needed for development of new airports or PPP may be used for future developments of airports.

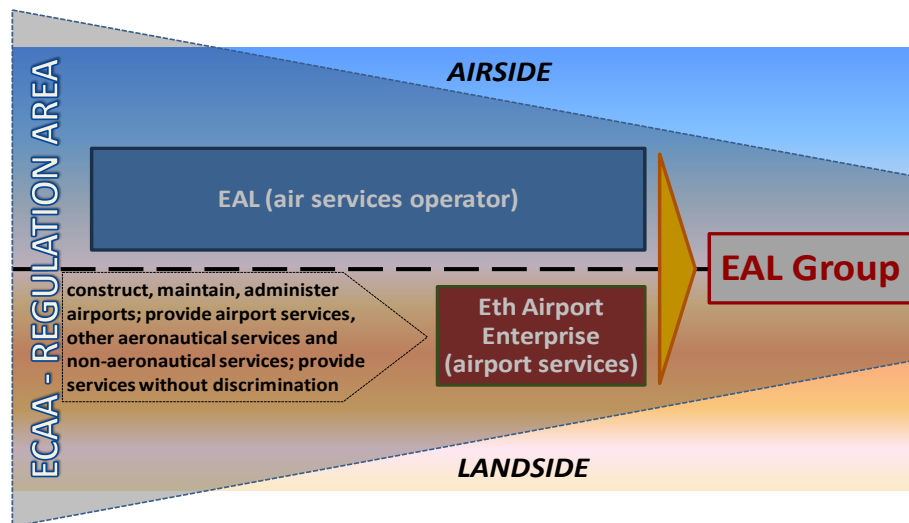
So far, regional governments have not been authorized/delegated to build and operate Airports. The Somali Regional Government built and inaugurate in 2016 the Kebri Dahar airport by its own budget. However, the regional government has later transferred it to Ethiopian Airport Enterprise to be managed and administered by the latter.

Ethiopia has no specific domestic law pertaining to govern/regulate safe transport of dangerous goods by air. Rather, it chooses to fully apply "Annex 18 of the Convention and the International Civil Aviation Organization Technical Instructions for the Safe Transport of Dangerous Goods by Air" and Article 36 of the Civil Aviation Proclamation No. 616/2008 (as Amended) authorizes the Civil Aviation Authority to monitor and enforce the provisions of the aforementioned Annex in Ethiopia.

Besides, the Proclamation provides powers and duties to ECAA to take measures to minimize "any disturbance to the public and any adverse effect on the environment from noise, vibration, atmospheric pollution or any other cause attributable to the use of aircraft for the purpose of civil aviation."

The evolution of the Ethiopian aviation sector is for sure a success story, nevertheless, in this phase of planning the future path of the sector some elements that contributed to the success could act as hampers of further growth of the sector itself. The figure below describes the evolution of the commercial side of the aviation sector.

Figure 7: Evolution of EAL Group's scope of services



As stated above the widening of the scope of Ethiopian Airlines was part of the development strategy of the company. This strategy can be perceived as the pursuance of a development trajectory undertaken by the company over time and the further integration as a reaction to the competitive environment of the sector.

In fact, the development of the company began with a long-term partnership with the American company TWA (until 1975), followed by an autonomous growth path that led to the entry into Star Alliance network in 2011. Currently the company is one of the more dynamic providers of transport services, both for passengers and cargo, and, moreover, for maintenance services to other companies.

According to this point of view, two main issues seem to lead the integration between the provision of air services and airports management: i) the need to ensure adequate quality for passengers (directly managing the land side of the travel experience of customers) and ii) the need to increase efficiency and management flexibility of airports (overcoming the operational and administrative constraints that affects several companies, both public and private, like - for instance - the currency regulations).

In terms of fares, the air transport service is almost totally liberalized and market driven, although market access was blocked until the new investment regulation was approved. The only legal obligation that the air transport service providers have is to set effective tariffs covering the costs of providing service. This tariff shall be communicated with and registered by the ECAA before the service provider commences its service. The Authority may suspend only if it finds

that the tariff is unfair, discriminatory or otherwise adverse to the public interest; there is no information found whether the Authority has suspended any operator's tariff so far. On the other hand, domestic fares reserved to Ethiopian citizens, lower than standard tariffs, are issued by EAG without any legal obligations but only as a result of a moral suasion by the public authorities.

In terms of airlines services, with about 12 million of carried passengers, the international part of the traffic is about 83% while domestic is at 17%. The low development of domestic services is mainly due to the early stage of this kind of mobility which, in turns, has two explanation factors: the low level of per capita revenue and a lack of cultural habits in using air services to move across the country. Within this landscape the economic viability of domestic routes is rather variable but, beyond legal obligations, the role of sole (real) service provider in the country makes the company under the moral obligation to operate services on the domestic network so that, when a new airport is opened, the connection must be assured although the traffic flows/tariffs levels do not assure an economic equilibrium of the route.

The approval of the new investment regulation changes the rules of market access and depicts a new scenario which allows private operators to enter the market of domestic services. Under this perspective, the control on airports development (and management) set the company in a pivotal role to plan timeline and direction of the investments and, moreover, to protect its profit from an high growth of not profitable routes.

Inland Waterways

The description of the sub-sector is based on a distinction between infrastructure and service providing. At Federal level, the sectoral power and duties of MoTL can be described as follows:

- Infrastructure Powers and Duties;
 - Prepare national plan related to infrastructure development of transportation
 - Ensure utilization of advanced technologies in transport sector
 - Ensure that the transport infrastructure is constructed, upgraded, maintained
 - Identify measures that mitigate the impact of transport infrastructure
- Services powers and duties
 - Establish regulatory framework for safe and reliable transport service
 - Undertake research
 - Undertake capacity building activities

At Federal level also different public bodies share sectoral responsibilities: EMAA, Basin Development High Council and Basin Development Authority.

According to the establishment proclamation of EMAA (No.549/2007) it has the following powers and duties related to sectoral issues:

- Infrastructure powers and Duties:
 - Regulate the manufacture, possession use, sale and purchase of vessel, license and control;
- Service powers and Duties:
 - Issue license and support bodies, persons engaged in inland waterways transportation services.

The Authority is accountable to MoTL.

The other two bodies at Federal level are not concerned with transport issues but they have anyway an important influence on policies of use of water resources, both for agriculture and energy scope.

The Basin Development High Council, according to the establishment proclamation Nn.534/2007 has powers and duties are as follows:

- Direct the preparation of river basin plan and submit same for approval by government;
- Examine the appropriateness and prioritization of the constituting of major water works in the basin;
- Provide policy guidance and planning oversight to ensure high level coordination among stake holders;

- Manage water use disputes between Regional States in the basin;
- Provide information and advisory support to the body in charge of negotiating with neighbouring countries where the basin is part of trans boundary basin.

The proclamation provides a definition of regional water basins and designed a structure of future regional water authorities which had never been established.

The approach of the proclamation 534 2007 has been modified by the establishment of a Federal authority, the Basin Development Authority, whose powers and duties have been stated in the proclamation No.441/2018. They are as follows:

- Develop and use a river basin model to guide and support the basin water resource strategic plan and water administration
- Develop plans for protection and sustainable use of basin
- Undertake administration of river training activity
- Prepare basin development and management plan
- Conserve, protect and manage water bodies and related ecosystem
- Prepare optimal and equitable allocation and utilization of water bodies
- Initiate and submit to the Basin High Council policy measures needed to create conducive environment for an integrated water management process
- Undertake Policy Study, survey and research needed
- Setup a forum for effective network among stakeholders
- Develop and manage basin information system
- Prepares and provide information for concerned body in charge of negotiation with other countries about trans-boundary river basins

The sole important company of the sector is Lake Tana Transport Enterprise (LTE), founded in 1942 (E.C.) Currently, the enterprise is owned by the Amhara Regional State and has its own legal personality. The firm is accountable to the Amhara Regional State public enterprises monitoring and support authority.

The Enterprise has the following objectives:

- Infrastructure area.
 - Build and expand hotels and other recreational facilities in the airports,
 - Construct warehouses on the ports,

- Manufacture and maintain various boats, metal & wood products,
- Participate in share market and investment areas.
- Service Powers and Duties.
 - Transporting persons and goods via boats on the lake,
 - Tour services via boats for the domestic and foreign tourists,
 - Provide driving boats training,
 - Protect safety of goods and passengers,
 - Collect appropriate charges from customers.

LTE has a total staff of 193 people, is led by a General Manager and a Deputy General Manager and it has the following major departments/ Functional units of which two are branch offices:

- Water transport department;
- Hotel and recreation department;
- Technology development department;
- Finance and property administration

- department;
- Planning and business development department;
- Human resource and general service department;
- Gorgora branch office;
- Delgi branch office.

Urban Development.

According to the Constitution the power to “enact laws for the utilization and conservation of land” is given to the Federal Government, while Regional Government are empowered “to administer land (...) in accordance with Federal laws” (Articles 51.5 and 52.2(d)). To this purpose a specific legal framework is in force which provides principles and instructions on this matters and delegates regional states with the power to enact rural land administration and land use law. Besides, the same framework establishes instructions on urban land, rural land and expropriation rules and procedures.

LEGAL FRAMEWORK ON LAND USE

- **FDRE Constitution:** Articles 51.1 and 52.2(d)
- Proc No. 1161/2019 Expropriation of Land holdings for Public Purposes, Payments of Compensation and Resettlements
- **Proc 456-2005:** Federal rural land administration;
- **Proc 574-2008:** Urban planning;
- **Proc 624-2009:** Ethiopian buildings;
- **Reg 135-2007:** Payments of compensation for expropriated land

Land use and spatial organization of economic and social activities are fundamental to provide a well based planning of citizens' and freight mobility. Presently Ethiopia has a four-tier planning system, with national, regional, city and local planning layers. However, spatial planning is statutory only at city and local area scales. At national scale, work has been done on the NUDSP (National Urban Development Spatial Plan) and sector plans do exist. Regions draft general development plans, not corresponding to a regional spatial plan document. However, at city level, the city and the local scales correspond to specific statutory documents: The City-Wide Structure Plan (SP) and the Neighbourhood Development Plan (NDP). This division between structure plans and local plans corresponds to international practices.

The link between urban planning and mobility matter was established in 2016 with the issuing of the Urban Design Manual. This kind of tool

should be used by local government, professional and government officials, residents, private sector operators, and all relevant stakeholders towards the preparation of urban design in accordance with the development status/zones/ within an urban area.

Because of the federal structure of the country, the extreme variety of regional states concerning morphological features, density population, social and economic situation, can lead to different ways both in managing the use of land and in organizing the concerned institutions. As a general rule the urban administration is the first level in charge of managing land use issues. This power must be exerted within the rules issued at regional level which, in turn, must be coherent with the federal framework. The two chartered cities (Addis Ababa and Dire Dawa) are directly empowered to plan land use and set institutions within their administrative borders, while others urban administrations have to comply are with regional states' legislation on this matter.

A multilevel planning system similar to the one described above is also in place for the transport sector and in particular for road infrastructures and services. In fact, as for railways, logistics and maritime transport, aviation, the relevant level is the federal one, for the road sector the regional states play a crucial role through their regulatory power on this mode of transport which is it is the only one to be widespread throughout the territory.

The consequences for urban and suburban transport (passengers and goods) are that, also in this field, the two chartered cities can autonomously enact rules and organise their institutions in charge of the matter, while the other cities have autonomy but within the framework of the rules issued by regional states. Both local level have to act in accordance with the federal established framework.

Coming to the organization of mobility at urban level attention has to be given to the two chartered cities of the country, Addis Ababa and Dire Dawa.

The Capital City of Ethiopia has a complex organizational structure of both transport sector and planning of land use.

As a chartered city Addis Ababa can directly establish his institutional organization to manage the above-mentioned issues. In terms of administrative levels, the city has 10 sub city and 116 woredas. Sub cities manages a share of the city budget between 35% and 40% which is totally transferred by the upper level (the City government administration)²³.

Within the city administration the transport matter is in charge of the Roads and Transport Bureau (AACRTB). The bureau manages the various transport issues through different organizational units, sometimes directly embedded in the city administration, sometimes with an autonomous status under the form of authority or agency. In particular, for the infrastructure matters, the main relevant institutions are the Roads Authority and the Cobblestone Project Office, while for transport services the institutions involved are the Transport Authority and the Traffic Management Agency are the institutions involved.

As for land use and planning the main relevant institutions are the Construction and Housing Development Bureau, the Land Development and

²³ PEFA Program - Performance Assessment Report, Addis Ababa 2019.

Table 9: Addis Ababa Transport and Planning Institutions

AACRTB - Roads and Transport Bureau		Land use/Planning
Infrastructure	Services	
AACRA - Roads Authority	AACTA - Transport Authority -	AACHDB - Construction and Housing Development Bureau
Cobblestone Project Office	TMA - Traffic Management Agency	AALDM - Land Development and Management
		AACPO - City Planning Project Office

In the table above all the mentioned institutions are listed. It is easy to see that the coordination between land planning and transport sector is reserved to the upper level of the administration, the political one.

As public budget is concerned it has to be noted that road expenditures are one of the main items

of the Addis Ababa budget: in the period 2015/16-2017-18 the share of road expenditures varied between 14% and 22% of the total. The City Administration accounted, during the same period, a budget surplus varying from 2 and 4,5 billion ETB (see table below).

Table 10: Addis Ababa public budget (ETB billions)

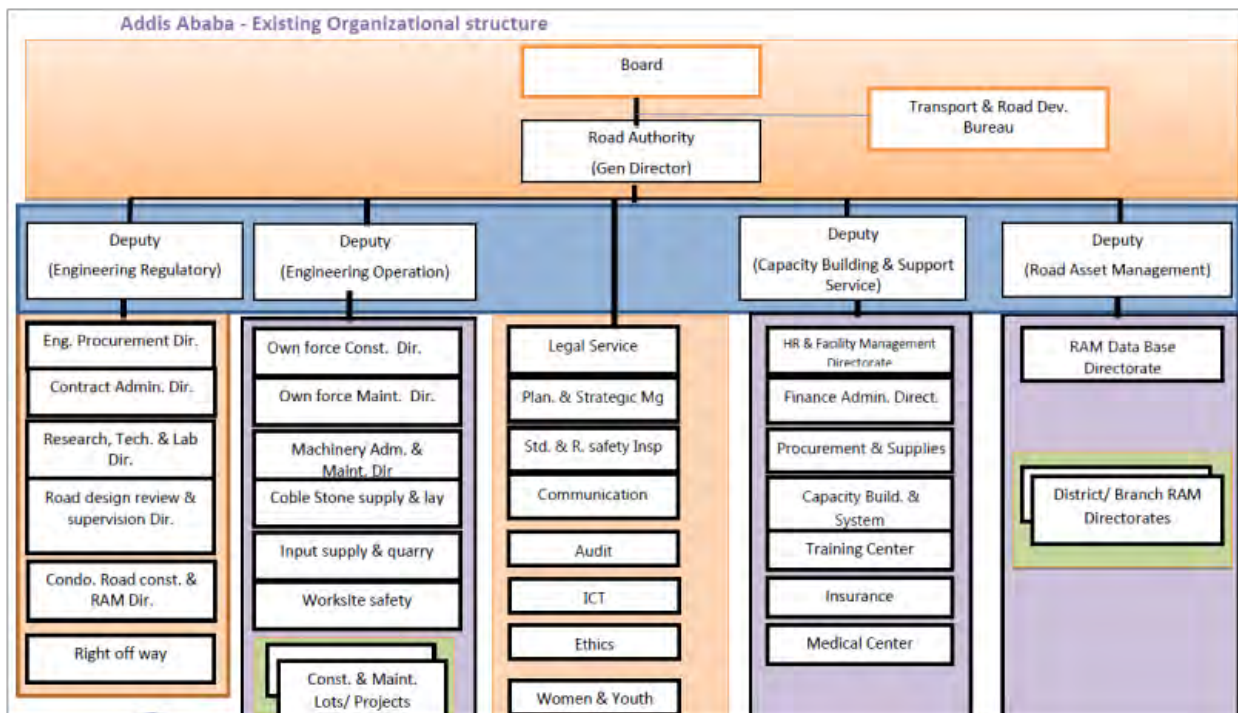
	2015/16	2016/17	2017/18
Total revenue	26,7	29,3	33,8
Total expenditure	22,2	27,4	30,0
Aggregate surplus (deficit)	4,5	1,9	3,8

Source: Consultant's calculation on PEFA Program - Performance Assessment Report, Addis Ababa 2019.

The bigger amount of this expenditures is assigned to road construction and maintenance and are managed by AACRA. The structure of the Roads Authority deserves to be described (see the figure below). The core functions of the authority are divided into four functional areas: Engineering Regulatory, Engineering Operation, Road Asset Management and Capacity Building

and Support Services. Each area is led by a Deputy Director General. The areas Engineering Operation and Road Asset Management have local branches which are accountable to their upper level. Besides the four core areas there are the typical staff units like Legal service, Audit, Public relation, Standard and Safety inspections, ICT, etc.

Figure 8: Addis Ababa organization of Roads Authority (AACRA)

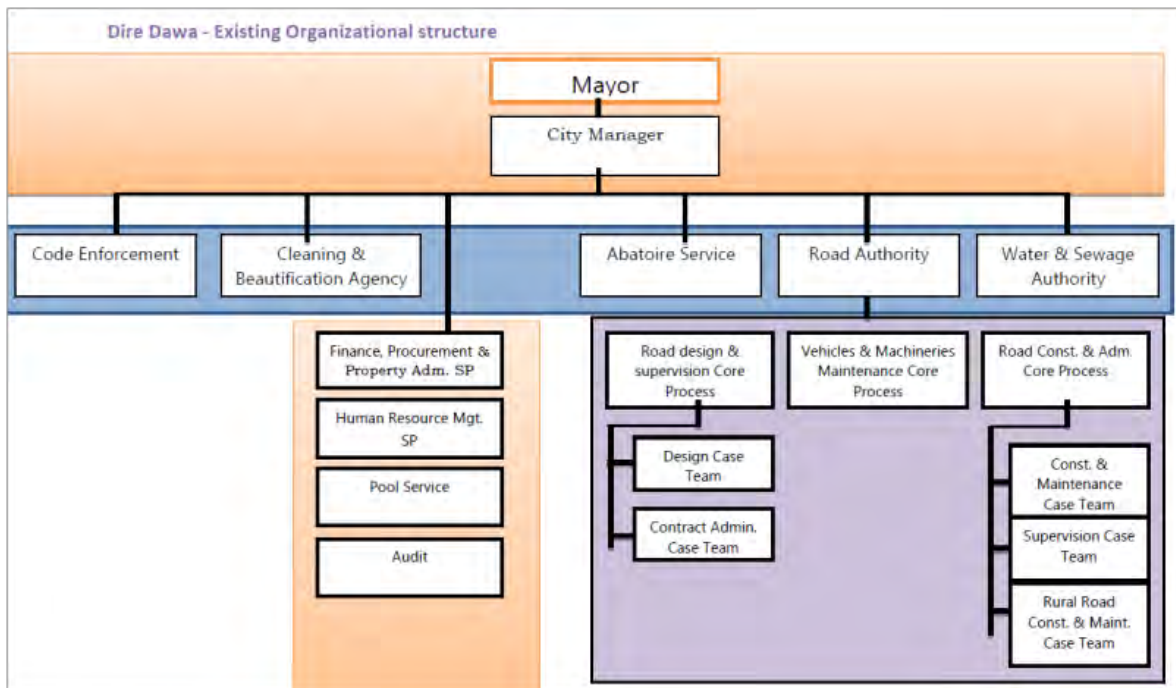


The structure of the transport institutions in Dire Dawa is dual and is based on the Road Authority and the Transport Bureau, according with a distinction between infrastructure matters and services matters.

The Dire Dawa City Administration Transport Bureau is accountable to the city manager and is in charge of vehicles licensing, drivers license, traffic management.

The Dire Dawa Road Authority is charge both of regulatory and operational duties. The authority is organized in three areas: Road design and supervision, Road construction and administration and Vehicle and machineries maintenance. All these areas are supported by staff units (HR, Finance, Planning, and Procurement) which act horizontally, supporting all the bureaus of the city administration (see figure below).

Figure 9: Structure of the Dire Dawa Road Authority



Source: NTU International, *Institutional Capacity Assessment (ICA) Report*

In Ethiopia, public passenger transport is centred on the principle of the private market. The competent regional or urban transport offices issue licenses to private operators and authorize the timetables of the services and the relative tariffs.

The provision of road transport services has been deregulated since 1992 as part of the liberalization of the economy and subsequently reaffirmed around 2005. At the basis of this choice were both the difficulties of the public budget to finance the urban public transport systems and the inability of the systems themselves to collect sufficient revenue to maintain the levels and quality of service.

The predominant role of the private sector has taken the form of a multifaceted provision of services in the urban environment, with different kinds of services offered: three-wheeled vehicles,

taxis, mini buses, midi buses. For intercity services, most departing from the capital city and connecting the main cities of the country, private operators provide bus links.

In this scenario, the role of public enterprises is negligible except in the capital city. In fact, the situation of Addis Ababa is peculiar compared to the rest of the country:

- over 3 million of inhabitants officially registered;
- over 50% of the national vehicle fleet registered;
- seat of the Federal government, of the Regional government of Oromia, of various regional and international organizations (UN Commission for Africa, African Union, etc.) and of many international NGOs.

The extension of the city and the concentration of both public offices and economically significant private activities requires an adequate level of mass public transport services which, at the moment, are not yet operational. In fact, the shares of daily trips still see pedestrian mobility in first place with more than a half of the trips, but this figure it is not the result of a "green" behaviour but the signal of a gap to be filled in terms of quantity and quality of mass transport services.

Public enterprises providing bus services play a leading role in the public transportation system of Addis Ababa: they are Anbessa City Bus Service Enterprise (ACBSE), Sheger Mass Transport Enterprise, and, with some limitations, Public Service Employees Service Enterprise (PSETSE).

During 2017/18 the first two companies carried on average about 425.000 passengers per day, while their financial results indicates that the companies accounted losses in their service providing and that they are subsidized by the City Administration every year²⁴. The tables below describe the main figures of the two companies, enlightening a very low performance in terms of asset availability (operating vehicles compared to the owned fleet) despite the effort undertaken by both the enterprises to invest in new vehicles.

²⁴ M. Girma, B. Woldetensae, *A Study of State-Owned Public Bus Transit Performance in Addis Ababa City*, THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT, Vol 7, October 2019.

Table 11: Anbessa City Bus Service Enterprise main figures

	Anbessa City Bus		
	2016/17	2017/18	2018/19
Vehicles held	829	728	1.158
Vehicles Operated	447	438	438
Number of employers	3.398	3.559	3896
Total Covered km	18.759.848	16.220.017	17.297.432
Number of Passengers	133.770.900	105.758.047	113.109.108
Total cost	625.649.000	591.012.000	587.697.444
Total revenue	563.985.000	555.904.000	604.024.593
Traffic Revenue	275.201.000	229.183.000	203.005.833

Source: M. Girma, B. Woldetensae, A Study of State-Owned Public Bus Transit Performance in Addis Ababa City, THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT, Vol 7, October 2019

Table 12: Sheger Mass Transport Enterprise main figures

	Sheger City Bus		
	2016/17	2017/18	2018/19
Vehicles held	250	316	321
Vehicles Operated	121	251	240
Number of employers	782	1.492	1.877
Total Covered km	4.400.000	12.500.000	9.100.000
Number of Passengers	19.800.000	49.048.200	57.500.000
Total cost	168.140.908	237.384.526	378.555.130
Total revenue	142.081.625	245.349.419	175.535.697
Traffic Revenue	42.081.625	106.394.088	158.167.673

Source: M. Girma, B. Woldetensae, *ibid.*

As the third bus company is concerned, PSETSE, its main mission is devoted to public employees working in the capital city but, outside office opening and closing hour the company can use the vehicles to provide services to all citizens without limitations "at a reasonable price". The company holds about 190 buses and carries about 77.000 ridership/day which is 4% of the total in Addis Ababa²⁵.

In terms of accountability, the first two public enterprises above quoted are under the responsibility of the City Administration, while the last enterprise is accountable to MoTL.

Besides the public enterprises providing bus services the Addis Ababa scenario is now enriched by a rail mass transportation service. The Addis Ababa Light Rail Transport System (AALRT) is a 35 km rail infrastructure, 39 stations, divided in two routes (East - West, North - South) with a common part in the center of the city. The AALRT was built by the Ethiopian National Railways Company (ERC) and formerly managed by a Chinese JV (CREC-SZMC Joint Venture) through a management contract. AALRT is presently managed by a specific Business Unit of

ERC, this means that is formally accountable to PEHA as a part of the ERC business scope.

According with the preliminary results of the Strategic Transport development Plan of the city, AALRT, with a fleet of 33 wagons, has about 3% of the total market. The same source attributes to the "informal" transport sector (midi bus, mini bus, etc) about 68% of the total market, underlining the fact that mass transport is not yet well distributed throughout the relevant territory of the city to represent an effective transport solution for the majority of the potential users.

This latter scenario, a lack in modern transport solutions, is the landscape of the main cities in Ethiopia different from that of the capital city. Outside Addis Ababa the efforts are at the initial stage, with policy measures trying to frame informal transport in more structured, scheduled and effective transport systems.

Regional State Level

Coming to the Local Level, the Constitution states that Railway, Aviation, and Maritime are under the jurisdiction of the Federal Government that may delegate the Regional States to exercise its powers. The case of Road sub sector is different and the local organization of public powers is devoted to the Regional States and is regulated by the constitution of the state itself or by the regional laws governing the sector.

²⁵ These figures are the preliminary results of the Strategic Comprehensive Transport Development Plan (SCTPD) for Addis Ababa, an ongoing project managed by Rambol and IRD (SCTDP-Report on Model Development – Rambol & IRD 2020).

Concerning the financial issues at least one part of the budget of the regional states, including the one for road infrastructures, comes from financial transfers from the federal budget. In fact, pursuant to Article 62.7 of the Constitution, the subsidies and revenues deriving from joint federal and state tax sources are distributed by the federal government to regional states. The method of assignment is valid for three years and is based on the population and the size of the region/state, the proximity to the federal capital, the status of socio-economic development (the needs of the region/state), aid for generating own revenues (revenues State as a property tax). As a result, even if there is no destination constraint for transfers between the federal and regional level, the institutional role of the federal level maintains great importance.

In general, each regional state has a transport office, linked at the federal level to the MoTL and the FTA and a road authority linked to the MoTL and the ERA with their subordinate branches both at Woreda and Zonal/Town level. Beyond this general consideration there are different ways in structuring the institutional framework of the road sector: in some cases both transport bureaus and road authority coexists under the same organizational structure, while in other regions has been established a separation

between infrastructure issues (road authority) and administration services (transport bureau).

Eleven Regional Road Authorities have been established, with different names: Addis Ababa (Road Authority), Afar (Road & Transport Bureau), Amhara (Road & Transport Bureau), Benishangul (Road & Transport Bureau), Dire Dawa (Road Authority), Gambela (Road Authority), Harari (Road Authority), Oromia (Road Authority), Somali (Road & Transport Bureau), SNNP (Road Authority), Tigray (Construction, Transport and Road Development Bureau). In some regions the authorities have extended mandates, hence there are issues as to the determinacy of institutional arrangements and streamlining of administrative and operational procedures and defining of decision-making responsibilities.

In terms of governance the example of road sector shows two main flows of decision to be considered: the political decision flow and the budgeting decision flow. In the picture below these flows are represented in a simplified form, showing a basic federal structure with a double financing channel (from MoF) for construction (through ERA) and maintenance (through Road Fund), flanked by the political decisional flow originating from MoT/Regional States and passing through FTA (for federal laws) and RRAs.

Figure 10: Political and Budgeting flows interactions



As the road sector represents the largest part of the Ethiopian transport system, it is easy to see that, to be effective, the sector itself must have comparable levels of skills and competences, both among regional authorities and between the latter and the federal one. In addition, there is a government orientation that provides for a greater involvement of the Regional States in the responsibility of managing the road asset, in order to ensure greater uniformity of management models and principles.

Horizontal level

The Horizontal Level of the governance embraces some Ministries different from MoTL whose duties have some competences' intersection due to the activities assigned or to the bodies supervised/regulated. It is the case of the Ministry of Finance, which is the last owner of country's public enterprises and leads planning and budgeting processes of all the institutions. Also, Ministries supervising the production

activities, like the Ministry of Industry and Trade and the Ministry of Agriculture, could be included in this level. Eventually, as stated before, the Ministry of Revenues has a primary importance for the functioning of the logistics sector.

The way in which the ministries influence the functioning of the transport sector is twofold. On one hand, through the elaboration of guidelines or strategic decisions about the economic development of the country. It is the case of both planning and budgeting processes, embracing all Ministries, Authorities and public enterprises; or the case of the country's industrial specialization or country's export-oriented industries with the related implications on industrial/agri-business investments and plants locations, input/output freight flows and working force concentration; or, again the case of the customs procedures, which affects directly a relevant part of the time spent in the import process. Below this overall level a second issue is that of the public enterprises/entities directed/supervised by those

ministries, whose behaviours and decisions may affect the implementation of the transport policies planned at high level. In fact, besides the Ministries there are some agencies/institutional entities which acts as technical implementation organ of the government policy or public bodies in charge to design and develop some specific issues of that policy. A list of main entities is as follows:

- Public Enterprise Holding Administration (former Ministry);
- Investment Board (EIB)/Investment Commission (EIC);
- Planning Commission
- Industrial Park Development Corporation.

A synthetic scheme representing the Horizontal level is proposed in the picture below.

Figure 11: Horizontal Level of Governance

The Public Enterprises Holding and Administration (PEHA) is the former Ministry of Public Enterprises) and has been established following the reorganization of Government's powers and duties in 2018 (Proc 1097-2018). The Regulation 445-2019 provide the definition of powers and duties of the body. PEHA is the supervising body for the public enterprises in the transport sector.

PEHA's main scope is the management of the state shares in the public enterprises by ensuring their economic viability and, at the same time, to foster a better coordination between government development policy and performance of Public Enterprises. The Holding acts as the supervising authority provided in the Proc No 25-1992 regulating the Ethiopian's Public Enterprises.

The fundamental aim of PEHA is to develop modern corporate governance and corporate finance system within Public Enterprises in order to make them effective, competitive and profitable. Besides the classic shareholder role, PEHA has different leading powers on supervised companies on many issues. The following three are to be particularly underlined:

- a) submit recommendations to the government on potential new investment areas and expansion of existing investments and implement same approval;
- b) submit proposal to the government on the privatization of Public Enterprises under the auspices of the Ministry (of Finance) and upon approval, implement the same in accordance with the provisions of Proclamation Number 146/1998 and 182/1999;
- c) develop dividend policy, submit recommendation to the Ministry on the amount of the state dividends to be paid to the government by Public

Enterprises in each financial year, and follow up the implementation of same.

Besides public enterprises, the regulation of investments in the country represents a key tool for leading development and controlling national economic policy. The investments in the country have been historically regulated by the Investment Proclamation, giving rules and boundaries to the private investment, both from national and foreign company/citizens. This proclamation has just been revised (by Proc. No. 1180-2020 and by Regulation No. 474-2020) introducing important changes in the country's approach to foreign investment.

In fact, the law states the principle that "any investor may engage in any area of investment except where it is contrary to law, moral, public health or security", and 'Investor' is defined as "a Domestic or Foreign investor who has invested capital in Ethiopia". Furthermore, after defining a more flexible tool (regulation) to define sectors/industries reserved to national or Government investors, the Proc 1180-2020 states that except those reserved in accordance with the quoted regulation, "all areas of investment shall be open to foreign investors"²⁶.

The administrative organs supervising the investment process are the Ethiopian Investment Board, the Ethiopian Investment Commission and, moreover, similar Commissions established at Regional level.

The Ethiopian Investment Board has thirteen members and is chaired by the Prime Minister. It has important powers, for instance to "decide, in consultation with relevant public and private sector stakeholders, to open to foreign investors those investment areas reserved for joint investment with the government, or to domestic

²⁶ Proc No 1180-2020, Articles 6 and 2.

investors, or for joint investment between domestic and foreign investors, as well as restrict foreign investment in areas open to foreign investors where such decision is justified by public interest considerations". A practical example of the aforementioned powers is the decision to open the logistics sector to private investors, approved by the Investment Board in September 2018.

The Investment Commission is a Federal Government Agency with own legal personality and is accountable to the Prime Minister. The Proclamation revised its structure in order to make it more effective at attracting foreign investments and improving the services provided to investors.

The new investment regulation (Reg. No 474 2020) groups the different investment areas into four sections:

- 1) Investment Areas Reserved for Joint Investment with the Government,
- 2) Investment Areas Reserved for Domestic Investors,
- 3) Investment Areas Reserved for Joint Investment with Domestic Investors,
- 4) Investment Areas Open to Foreign Investors.

All the investments not mentioned in the first three sections are opened to foreign capitals.

The investment area reserved to domestic investors include Maintenance and repair services, including aircraft maintenance repair and overhaul (MRO) and Aircraft ground handling and other related services. In the field of transport services an apparently extensive area is also reserved, but, through specific exceptions, railway transport, cable-car transport, cold-chain transport, freight services with more than 25 tons capacity and all the services referred to the other sections are opened to foreign capital.

There are two areas opened subject to the co-investment with Ethiopian investors, public or private. International air transport services and Bus rapid transit project call for the public partner. Several business lines are opened in partnership with domestic operators like Freight forwarding and shipping agency services, Domestic air transport service, Cross-country public transport service with more than 45 passengers' capacity and Urban mass transport service with large carrying capacity. The table below summarise the situation.

Table 13: Investment in transport sector opened to foreign investors

Joint Investment with the Government (S1)	Reserved to Domestic Investors (S2)	Joint Investment with Domestic Investors (S3)
International air transport services Bus rapid transit	Maintenance and repair services, including aircraft maintenance repair and overhaul (MRO), but excluding repair and maintenance of heavy industry machineries and medical equipment. Aircraft ground handling and other related services. Transport services excluding the following areas: - Railway transport - Cable-car transport - Cold-chain transport Freight transport > 25 tons capacity Transport services reserved for joint investments with Government or Domestic investors	Freight forwarding and shipping agency services Domestic air transport service Cross-country public transport service using buses with a seating capacity of more than 45 passengers Urban mass transport service with large carrying capacity <i>The share of foreign capital must not exceed 49%,</i>

Consultant's elaboration on the Reg 474 2020

As Multimodal services are concerned, a directive for providing business license and competency certificate for multimodal transport operators has been drafted. This document lays down the criteria for the issuing of the authorization (work permit) to provide this kind of services; it also provides a mechanism to issue temporary licenses under the responsibility of MoTL.

Another element of the horizontal level of governance is the Public Private Partnership policy, which set another tool to incentivise the participation of private investors to the economic life of the country. In the transport sector the creation and the improvement of infrastructures is one of the core issues of the country. The related financial effort of the country is huge and

would be unbearable in the long term with the sole support of public finance, so that an important role should be that of private capital, both domestic and foreign.

The Public Private Partnership matter is mainly regulated by the Proclamation No 1076-2018. The PPP model established under the Proclamation aim at: i) create a favourable framework for privately financed projects; ii) enhance transparency, fairness, Value for Money, efficiency and long-term sustainability of the projects; iii) improve quality of Public Service Activity; iv) maintain macroeconomic stability by reducing growth in public debt. A specific Board is established (PPP Board), chaired by the Minister of Finance and under the supervision of a MoF Directorate with the main task to approve all the PPP projects and to revise the risk allocation of previous approved projects.

The definition of PPP stated by the Proclamation defined it as a long-term agreement between a Contracting Authority and a Private Party under which a Private Party undertakes to perform a Public Service Activity that would otherwise be carried out by the Contracting Authority and receives a benefit by way of i) compensation by or on behalf of the Contracting Authority; ii) tariffs or fees collected by the Private Party from users or consumers of a service; iii) a combination of such compensation and such charges or fees. The Contracting Authority is the public part of the agreement and is defined as a Public Body or a Public Enterprise which intends to enter into a Public Private Partnership Agreement with a Private Party.

The kind of activities regulated under the PPP Proclamation are grouped as follows: i) Design, construction, financing, maintenance or operation of new Infrastructure Facilities; ii) Rehabilitation, modernization, financing, expansion, maintenance or operation of existing Infrastructure Facilities; iii) Administration, management, operation or maintenance pertaining to new or existing Infrastructure Facilities. The first two groups are related to the so called "greenfield" and "brownfield" investments categories, while the latter includes activities that are much more managerial than building oriented.

2.3.2 The planning framework and the National Transport Policy

In the previous part, an assessment of the national transport policy was presented with regard to both international/regional framework and to that of national development policies. As

The process of setting a PPP scheme is based on two main roles on the public side: the contracting authority and the PPP Directorate at MoF. The proposal can be made from different sources but generally the public body or enterprise which has a project suitable to be financed by a private operator plays the main role. At MoF level, the PPP Directorate follows all the appraisals stages and decides if the project can be discussed at the Board level.

The PPP approach has been mainly utilised for energy and manufacturing sectors but also some transport projects should follow this path. To apply this mechanism an accurate analysis of the risks of the project has to be undertaken in order to identify which kind of risks can be assigned to each stakeholder involved in the agreement. Given the fact that this process is the outcome of a negotiation it is clear that the process has not a mathematical solution but is strictly connected with the business expectations of the potential investor.

In order to complete the framework of the horizontal elements of the governance the Industrial Park Proclamation has to be described. With the aim to attract and implement foreign investments, the Industrial Park Proclamation and the Industrial Parks Development Corporation Regulation have been issued, respectively in 2015 and 2014. The Proclamation No 886-2015 establishes the legal framework of the Industrial parks, regulating rights and obligations of the stakeholders involved in the process. The Regulation No 326-2014 established the Industrial Parks Development Corporation that is now under the responsibility of the Investment Commission. Among the objectives of the company there are the following purposes: i) Industrial Park Master Plan preparation, ii) ID development and administration, iii) to negotiate and sign loan agreements with local and international financial sources.

The transport implications of this latter element is of full evidence when one think to the planning of land use and of the manufacturing plants location. The impact of the planning of industrial park location and design affects directly the subsequently planning of transport network and services; the quality of the first by far influence the effort and the effectiveness of the latter.

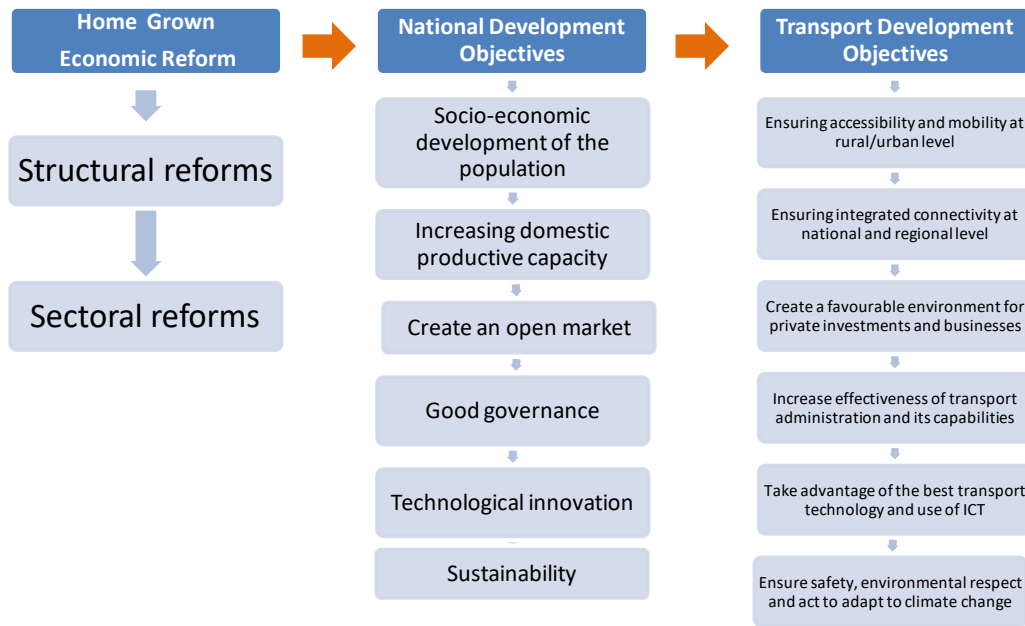
reported in that chapter the UN 2030 Sustainable Development Agenda, the Africa 2063 Agenda and the Home-Grown Economic Reform Programme are the reference documents to be

taken in account. It is now necessary to recall the process of transport planning and, in particular the contents of transport policy to complete the examination of the current situation of this matter.

According with the HGER two main groups of measures (structural reforms and sectoral reforms) together are aimed at increase the

productivity of the country and enhance its resilience to economic fluctuations. In the following figure is depicted a logical framework of the transport planning policies: within the figure are listed the objectives, at national and transport level, that can be stated in order to implement of the general policies declared in the general documents mentioned above.

Figure 12: The logical planning framework of the transport sector in Ethiopia



Coming to the planning documents issued by the MoTL (namely, the National Transport Policy of Ethiopia, the Transportation Sector's Ten-Years Development Plan and the Transportation Sector's Five-Years Development Plan) it is easy to see that the transport development objectives listed above have been reframed to define the strategic pillars of the long-term transport planning (TYP).

These pillars are the basis of the actions and planning measures in the transport sector and concern both issues specifically linked to transport infrastructures and related services, and the principles of sustainability of the national transport system. Furthermore, a transversal component underlying transport policy concerns the institutional management and regulation capacity of the sector.

In the framework of a developing economy the pillar "Transport infrastructure Expansion and administration" refers to the development and management policies of a fast-growing infrastructure. This means considering not only the actions relating to investments in infrastructure but also the definition and implementation of all the measures related to

manage and maintenance it, including the financial issues.

In the pillar "Effective and integrated transport and logistics services", the main keywords are "effectiveness" and "integration". In the Ethiopian context, with a low level of private motorization, this means making possible to provide services to as many people as possible. In this way the concept of accessibility shifts from the physical connection, assured by the infrastructure, to the service providing.

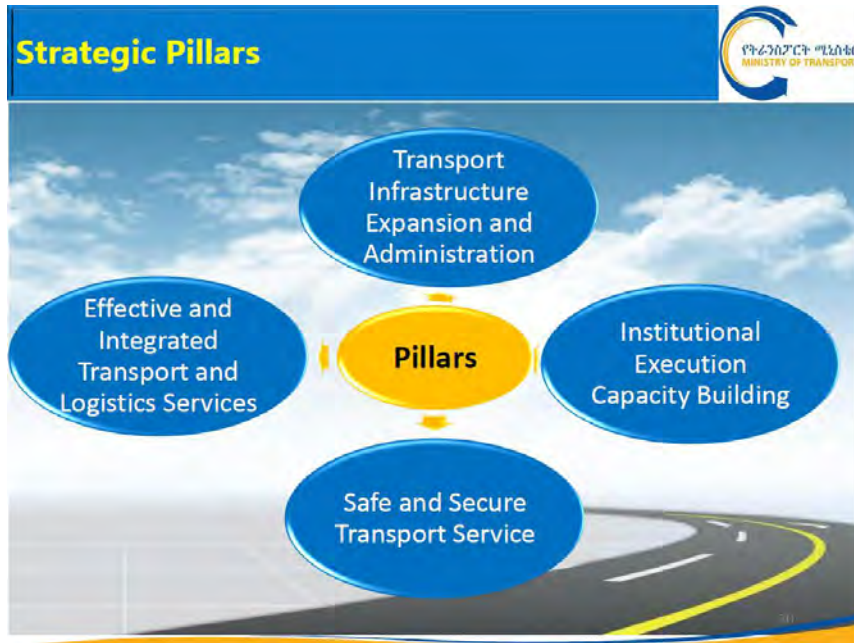
Besides effectiveness and integration, transport services must be safe and secure. The third pillar "Safe and secure transport service", means to design and provide services according to the concept of sustainability, that is to have an early looking at social and environmental impacts of transport activities in order to adopt the most suitable solutions to minimise the effects of the increasing mobility both for passengers and goods.

The last pillar concerns the institutions in charge of administrate and regulate the sector. The pillar "Development of institutional execution capacities" is aimed at make the institutions (and, in a wider sense, all the transport stakeholders)

effective and qualified both to manage and achieve the goals of the sector.

These pillars have been summed up in the figure below.

Figure 13: The strategic pillars of transport policy in Ethiopia



Source: Transport sector's Ten years perspective development plan (2013-2022 EC) -august 27th, 2020

Each of the pillars has implementation policies (literally "implementation strategies") which have been set out in the TYP and which concern all modes of transport. As described synthetically in the figure above these policies covers all the issues related to the development and

management of the transport system in Ethiopia. They need to be described in detail to understand the route that the government of Ethiopia wants to give to the development of the country's transport system. The policies are listed in the table below.

Table 14: TYP Implementation Strategies

PILLARS	TYP IMPLEMENTATION STRATEGIES
ENSURE AN INTEGRATED, EQUITABLE AND ACCESSIBLE TRANSPORT INFRASTRUCTURE	<ul style="list-style-type: none"> > Implementing the Transport Master Plan > Developing Express Roads through PPP > Develop Transport & Logistics Centres with Regional, City Administrations, Government and Private Sector Participation > Engage local contractors & consultants in feasibility studies, designing and construction of Railways projects
ENSURE AN INTEGRATED, EQUITABLE AND ACCESSIBLE TRANSPORT SERVICE	<ul style="list-style-type: none"> > Implement Incentivized System for Mass Transports > Implement Non-Motorized Strategies > Ensure Integration Among Urban Transport Modes > Enhance cross-border public transport Services with Neighbouring Nations > Implement the National Aviation Policy > Enhance the Structural & Operational state of Transport Operators
ENSURE A SAFE TRANSPORT SERVICE	<ul style="list-style-type: none"> > Develop & Implement the Road Transport and Road Safety Policy & Strategy > Establish a Regulatory Authority for the Railway Sector > Enforce the Safety Standards of the International Maritime Organization > Enforce the Safety Standards of the International Air Transport
ENSURE AN EFFICIENT AND RELIABLE LOGISTICS SERVICE	<ul style="list-style-type: none"> > Implement the National Logistic Strategy > Implement Seaport strategy > Implement demurrage law

PILLARS	TYP IMPLEMENTATION STRATEGIES
	<ul style="list-style-type: none"> › Organizational structure and system setup for Corridor development and management
<p>IMPLEMENT CLIMATE RESILIENT TRANSPORT INFRASTRUCTURE AND SERVICE</p>	<ul style="list-style-type: none"> › Implement a transportation sector strategy for climate change; › Implement a non-motorized transportation strategy; › involve global environmental organizations working on climate change; › Implement environmental protection initiatives involving the community and the private sector
<p>IMPROVE THE EXECUTING CAPACITY OF THE SECTOR</p>	<ul style="list-style-type: none"> › Establish an incentive mechanism to expand the mass transport service › Improve transport sector training Institutions capacity through establishing partnership with higher educational institutions › Establishing a corridor development and management system › Engage Global Partners and the private sector working on Climate Change and Environmental Protection › Setting up Institutional arrangement to achieve transport Sectors Mission

Source: Transport sector's Ten years perspective development plan (2013-2022 EC) -

In order to have a better comprehension of the scope of the policies stated by the Government it is interesting to examine some implications of the pillars issued in the TYP.

Ensure an integrated, equitable and accessible transport infrastructure

In this case two dimensions must be taken in account. The first one is related with the physical existence of the infrastructure, that is the long run process undertaken by the country to progressively build a modern transport system based on a multimodal network of infrastructures (road, rail, dry ports, airports and ports connections). An equitable accessibility means to provide physical connections to the population, giving the ability to move throughout the country.

The second dimension is directly linked with the new role assigned by the HGER and by the TYP, to the private sector. This sector is called to contribute in a decisive way to new transport investments and business undertaking, flanking the public enterprises in the effort to satisfy the increasing transport demand. Following this approach, access to infrastructures needs to be ensured on an equitable and fair basis in order to ensure a level playing field between the operators, irrespective of their public or private nature. This, in turn, means to revise a monopoly-based legal framework, as the present national regulatory framework, into a different framework based on an open market scenario.

This should mean, for example:

- ensure an open and fair access to all the public networks or infrastructures as railways, dry ports, airports, to the operators aiming at

provide services (opening of services' market providing);

- ensure a third-party approach for the sectoral regulations' activities, avoiding that regulatory task being managed by market operators, not private nor public.

Ensure an integrated, equitable and accessible transport service

This statement is similar to the previous one, in fact infrastructure and services are the two sides of the same coin. Here the physical dimension is not the infrastructure but the service, accordingly the above statement means to make possible the providing of transport services to the most part of the population (basically to the whole population).

Following the HGER'S statements, to make possible an adequate increase of services provides not only a direct public intervention is needed but also a private one. As for infrastructures, also in this case the intention is to make possible to supply services on fair terms by public and private service operators, avoiding those monopolistic positions hinder private initiative.

Besides the considerations stated above for infrastructures, this means, for example:

- free access to the provision of freight and passenger transport services (road sector, logistics sector, railway operators, airlines operators, inland waterways service operators) in terms of authorization/licensing process;
- setting the level of passenger fares (in all sectors) consistent with citizens' ability to pay and introduce compensation

- schemes for service operators;
- improve the regulatory framework on competition and the institutions in charge of safeguard competition principles.

Ensure a safe transport service

This means that measures concerning safety have to be put in place, or enhanced whether in force, for each sub sector specially for, but not limited to, the road one. Suitable actions must be carried out for both design and maintenance processes for: infrastructures, vehicles, equipment. The same approach applies to people working in the transport sector, as knowledge and skills of working force must include a safe approach in the working environment. This implies processes based on periodical review of personnel's capabilities, exactly as maintenance acts for the physical components of the transport system.

Besides the single components, the production processes of transport services have to be reviewed to ensure level of safety aligning in the medium term to common international standards. One of the intermediate steps of this process is the implementation of the third-party actor in charge of safety rules design and implementation for each sector. This latter issue is of particular importance when the opening of the markets will be implemented, because it is a main part of the fair functioning of the markets itself.

Moreover, given the main role of the road sector, a strong stakeholders' engagement in implementing safety policies is requested. Institutions must ensure a uniform enforcement of safety rules and guarantee the implementation of technical tools which make it possible. On the other hand, drivers' training and licensing system must be oriented to incentivise safe and proper behaviours.

Ensure an efficient and reliable logistics service

Since logistics are of enormous importance to the country, the policy to be adopted must be able to quickly overcome the weaknesses clearly highlighted by the analyses conducted by the government.

The efficiency and reliability of a complex logistics chain such as the Ethiopian one are closely linked to the opening of the market along all the links in the chain. The new and enhanced role of private operators calls for a reframing of the public operator's role (ESLSE) in order to make it compete with new services providers aiming at invest and make business in the sector.

In terms of policies this means an adjustment of the regulatory framework in order to make possible the providing of services and the ancillary activities linked to the service providing.

Besides the regulatory side also a new commitment to the public enterprise is called. Here the point is the duty of the government to review and redesign the role of ESLSE: no more a de facto monopolistic actor doing everything but service provider focused on the tasks clearly defined and assigned by the public shareholder.

The dimension of services' reliability is also strictly connected with the capabilities of the working force and professionals within the sector. This means to involve in a capacity building action not only the business side of the sector but also the involved public institutions: MoTL, EMA and Ministry of Revenues for customs issues.

Implement climate resilient transport infrastructure and service

This pillar is connected with the overall impact of the transport system, both for infrastructure and services providing. It has to be noted that in the past years Ethiopia paid a particular attention at this issue aiming at became the African leader in this field.

The policies' dimensions involved here seems to be at least three: energy, technology and behaviours. The energy mix of transport services' production is decisive for the impact of the transport system, this means, given the present and future role of road in satisfying the transport demand, to tackle a transition to a less impacting energy mix.

This, in turn, calls for a strong injection of technological innovation in the transport system, as is demonstrated by the worldwide transport scenario which is rapidly shifting towards new mobility issues based on new clusters of technical solutions for vehicles, monitoring systems and also infrastructures.

The third dimension is the human factor that means the behaviour of transport stakeholders (institutions, citizens, companies). Here the point is the variety of the Ethiopian society, going from the young and trained citizens of cities to the elder inhabitants of country's peripheral woredas.

Tackle with the above challenges means to implement both "a transportation sector strategy for climate change" and a "non-motorized transportation strategy" able to lead the country in a long transition towards a different transport system. This will have significant impacts, among

other things, on the national automotive industry but also on the energy sector, which is committed to making Ethiopia not only independent in production but also a net exporter of green energy to Africa.

Improve the executing capacity of the sector

The capacity of transport institutions to execute effectively the actions/measures to be implemented is one of the pivotal abilities to ensure a successful planning process.

Execution capacities are strictly linked with two dimensions: a clear definition of the institutions' mission and a coherent dimensioning of personnel, both in terms of number and skills.

The mission's definition has to be adapted to the changing conditions of the transport system, which is not static but evolves dynamically as, for instance the case of regional road authorities whose role (and tasks) increase as the density of the network increase.

To face this change a specific process is necessary to monitor during time the coherence of the institutional architecture, looking at task's assignments, interfaces among different institutions and, furthermore, to the border from public duties and private initiative. The development of the above dimensions allows public institutions to implement suitable tools or specific provisions needed to carry out the established plans. It is the case, for example, of the incentive schemes and of the institutional arrangements needed to manage the transport corridors.

The analysis of TYP and FYP, together with the interviews conducted, enlightened the adequacy of the planning process to design the transport's investment program for each sub sector. A detailed description of planned investments is provided in the following paragraphs.

As policy measures are concerned, TYP, FYP and the NTS contain a lot of measures to implement the transport sector development. The official planning documents present specific areas devoted to "Program and Strategies" and "Organizational administration capacity, policies and strategies". The documents quoted are as follows²⁷:

(7.1) Programs and Strategies

1. Integrated transport master plan
2. National logistics strategy
3. Non-motorized transport strategy

4. Blue economy strategy
5. Multinational Transport Expansion Strategy
6. Automotive industry expansion strategy
7. Road sector master plan
8. Roads' functions level research (road classification)
9. Woreda transformation initiative program

(7.2) Institutional Capacity, Policies and Strategies to Implement.

1. Transportation policy
2. Aviation sector policy
3. Road sector policy
4. Railway sector policy
5. Road transport policy
6. Logistics sector policy
7. Road Resource management policy
8. Road Payment Policy
9. Railway Safety Act
10. Public transport Act
11. A Guide to the Coordination of Railway Stakeholders
12. Multi-modal transport regulation
13. Improvements in the organization of the sector
14. Establishing a Corridor Management Board

The National Transport Policy²⁸ provides principles, general and specific objectives of the specific measures to be undertaken by the GoE in the transport sector.

The main policy issues raised by the NTS are grouped in two areas; Transport services and Infrastructure expansion. This first area declares many intervention priorities as follows:

- accessibility of service;
- areas of private (domestic/foreign) investments;
- finance requirements for both infrastructure construction and service delivery;
- collaborative system for public/private transport infrastructure projects,
- service delivery and traffic management;
- competitive transport service;
- integration among the various modes of transport;
- integration of both land use and

²⁷ TYP Chapters 7.1 and 7.2, English version, November 2020.

²⁸ National Transport Policy, May 2020

- transport planning;
- integration of international and continental transport services;
- realize and sustain safe and secured transport system;
- mobilizing the diaspora's resources to enhance the domestic implementation capacity;
- reduce the effects of climate change, environmental pollution, accident and traffic congestion;
- foster efficient logistics and corridor management;
- improving recovery options to reduce the adverse effects of man-made accident;
- give attention to non-motorized and mid-level transport service delivery alternatives,
- support those deserving special need and an equitable distribution of transport service to regions;
- align roles and responsibilities of policy issuing, regulatory and implementing institutions at different levels of the hierarchy with accountability.

In the area of Infrastructure expansion is reminded the need of realizing infrastructure in quantity and at the time needed by the transport demand. This calls to the role of private investors to support the public effort.

By describing the implementation strategies of the policy measures, the NTS reminds the importance of different dimensions of the implementation process: i) the Federal/Regional Relationships, ii) the Regional, Continental and International Relationships and, last but not least, iii) the Institutional implementation capacity.

This latter dimension describes the crucial role of MoTL but also of all the other institutions of the sector and outside the sector, which should support the MoTL in its role of coordinator of the implementation process. In fact, given the role of the transport system in the economic and social progress of the country, a big number of

2.3.3 Main findings, Road sub sector

To present the main results of the institutional evaluation of the road sector it is necessary to make two important distinctions. By following these guidelines, it will be possible to better focus on the specific assessments and, in the subsequent parts of the report, on the specific actions/measures to suggest.

The first distinction to be followed is that between the federal level and the regional/local

stakeholders are involved in the implementation of the transport policies.

The last issue to be enlightened is that concerning the monitoring of the process. also in this area the MOT's role is crucial and the NTS states some guidelines to be followed as follows:

- avoid wastage of resources and redundancy of activities,
- measure performance by identifying performance indicators,
- design a website to gather comments and feedback from beneficiaries and development partners about policy implementation,
- actively work in collaboration with stakeholders
- create conducive environment for policy implementation, attract investment and contribute to overall economic growth.

The assessment of the National Transport Policy has highlighted some aspects of considerable importance concerning the international and domestic general framework. To complete the examination, it must be noted that the number of specific policy documents/strategies/priorities to be implemented is very large. Furthermore, as each of the implementation plans will require not only a budget, but also time, staff and organizational efforts, it is easy to understand that this very broad set of tasks that must be coordinated and verified by the Ministry can likely lead to difficulties in carrying out these activities.

Two types of actions can be suggested to address these difficulties. The first concerns the area of capacity building and will be described in the specific chapter dedicated to this topic. The second action requires further analysis and revision of the problems mentioned in the previous planning documents, in order to obtain a better understanding of the measures and, consequently, to have the possibility of establishing intervention priorities.

level. The analysis of the institutional framework of the Ethiopian transport sector has clearly highlighted different kind of issues between the federal and the regional dimension.

The second distinction is that between infrastructure and service provision. In fact, it should be noted that the implementation and management of infrastructures and the provision of services require different logical chains of

activities. For the Infrastructure domain the chain is: design/build/(operate) maintain/finance, while for the domain of Service providing the chain is: design/plan/license (authorize)/provide (operate & maintain)/finance.

As for the building of infrastructures, one issue concerns the construction capacity and the availability of equipment. A construction program as important as that undertaken in Ethiopia in the last decades gave birth to a domestic industry, essentially of public nature. Domestic private companies do exist but they do not have the same structure and knowledge of the public enterprises. Furthermore, in the field of the availability of machinery and skilled workforce there are shortage and gaps affecting the ability to complete the works in the due time. Also in the maintenance field the same issue is present, with a lack of machinery and skilled workforce which hampers the accomplishment of ordinary maintenance activities, hindering the availability of the road network, particularly at local level.

Furthermore, the absence of a national manufacturing industry in the field of infrastructure machinery makes the construction sector strongly dependent on foreign supplies, increasing the request for foreign currency and worsening the balance of payments.

Despite the effort of the public institutions, mainly ERA and RRAs, the gaps are yet present and, in a framework of an increasing network, this is an important issue to be considered.

Another issue, strictly linked with the one aforementioned, have to be underlined. The road network in charge to the Regional States is managed by the competent authorities (RRAs) through different organization models, often different to that same adopted by ERA. Moreover, in many cases the regional transport bureau and the road authority are under the same organization, with a different allocation of responsibility and the mix of different functions. This led to different ways to approach the management of the local road infrastructure and, given the gaps on the supply side mentioned above, these leads, in turn, to the scarce performances described above.

The asset management approach is not present at local level, while it has been introduced at Federal level. To approach this methodology a preliminary step is needed: an effective, robust and shared database of all roads, able to base the allocation of roads' management responsibility to the different institutional bodies. Progress on this field will allow to the Federal level to lead a process of transfer skill to the local

level which appears to be a challenge of the next years for the sector.

It is useful to observe that some practices to overcome construction or maintenance gaps have been implemented at local level. It is the case of Oromia and Amhara Road authorities with the implementation of programs aimed at incentivize private operators through the leasing of machineries previously purchased by the public institutions.

A third issue is that concerning the financial resources to support the future road investments. A huge amount of money is requested to meet the financial needs of the development planned for the next years, both at federal and local level.

It is appropriate to distinguish between the two levels of the development program because the financial source could be at least partially different. In fact, while for the local level the role of development financial institutions will be crucial (because the programs have a high social development aim), the investments in the federal network can be supported by a relevant effort of private investors. In fact, these kinds of projects will likely be those with a higher level of traffic, able to guarantee an higher attractiveness for a private investor.

A financial gap is also recorded for the maintenance activities, as the resources of the Road Fund seem to be insufficient to cover the increasing needs of a network which is growing over time. This kind of increasing needs is strictly linked with the governance and management model of the local networks above described. The allocation at regional/local level of the responsibility to manage the infrastructure plays a crucial role and the adoption of an asset management approach is a way to increase the awareness of the infrastructure managers on the maintenance topics.

As far as the providing of passenger services is concerned, the main issue is related to the quantitative level of services. Given the targets fixed by the TYP in terms of: number of passengers served, number of routes to be covered, number of cities (with more than 50 thousand inhabitants) to be covered with mass services, the conclusion is a big increase of the road fleet capacity. There is an evident insufficiency of the road transport system to satisfy the potential transport demand, which will have to be met mainly by public (collective) transport since private motorization will not be able to cope with it due to the limits of the income per capita. The development of transport corridors, both national and international, will

reinforce this gap because the regional authorities supposed to be responsible of it are not aware about the dimension of the phenomena. The crucial point is that the need of new vehicles will be very important and this will have a big impact both on the sustainability and on industrial structure of the sub-sector.

As the current model of service provision is based on the market (i.e., the bus companies) this means that private (and public) bus companies will have to undertake a big effort to invest in new buses. Moreover, investments in ICT and digital transformation is required to provide integration among different services and, possibly, with other transport modalities.

Apart from considerations about the effects the investments on the balance of payments, this effort will certainly request a revision of services' tariffs which, in turn, will make arise issues about the economic sustainability of the present business model.

Also, for freight services an issue of carriage capacity arises. The increasing load request coming from international and domestic flows will call for investment on trucks, in terms of number and loading capacity. Similarly, to passenger services the investment effort will be in charge to the unimodal truck companies and to the future multimodal operators (including the only existing public operator, ESLSE). Differently from passenger services, as the company are free to set service prices, the market will be probably able to balance the financial effort with the competition among operators which will likely limit the trend of price increase, although in case of geographic (corridor) monopoly or specialised trucks (tanks or different kind of specialised vehicles) some risks does exists.

Besides a quantity gap, also a quality gap arises from the assessment. High transit times of road services affect the main transport routes, due to inadequate road quality, dry port and sea port congestion, vehicles' poor maintenance. This, in turn, hamper the services' efficiency and its safety (via trucks overload).

Investments aimed at increase the services' quality, as IT based investments, should be required but the ability of the companies to undertake this path is low. Besides, the domestic environment is not yet on this way: the Ethiopian Digital Strategy is at debut and the lack of primary connectivity prevent the private sector from undertaking relevant investments.

ROAD SAFETY

Road safety is a critical outcome of the assessment. Many converging factors led to

high level of accidents compared to the intensity of road traffic and low motorization rate. The rapid growth of the country found infrastructures, vehicles, institutions and citizens not prepared to face road safety troubles. Despite some decrease of accidents rates in the last two years it is early to say whether the negative trend has been overcome.

The policies to tackle the road safety issue carried out by the government have been structured at many levels, by considering the driving factors of the issue: roads quality (design and maintenance), vehicles age and maintenance, driver's behaviours and punishing rules, focused institutional entities and attention to the non-motorised mobility. All these factors need efforts to be undertaken and targets to be reached.

Another outcome of the assessment of the road sector is the lack/absence of a national industry for both infrastructure machinery/equipment and heavy transport vehicles for passengers and goods. Maintenance services for both machinery and vehicles are also lacking and this, as mentioned above, affects both the duration of the works and, above all, the quality of road maintenance.

The present status of this sub sector is mainly based on the evolution of the army supplier enterprise (METEC), which undertook a diversification process in different civil activities like machineries, buses and so on. This process leads also to JVs with foreign investors aiming at create domestic manufacturing plants.

This initiative alone, despite being a signal of progress for this sector, does not seem absolutely sufficient to create a production capacity capable of satisfying the demand from the construction and transport services sector.

A further dimension of this issue is that of workforce qualifications which are not at the level required to carry out the quantitative output necessary to provide successful performances in construction or maintenance activities. This problem seems to be particularly important for private companies.

Last, but not least, there is the issue of the sector's governance, particularly on the infrastructural side, but not limited to it. In fact, while a general division of responsibilities on the road network (federal and regional level) is clearly stated at legal level, what is needed is to draw the consequences of this principle. The various governance models and administrative structures adopted by the regional states have not fully succeeded in guarantee the performance of the task of managing the road

network, both in terms of its growth and maintenance.

This issue has different dimensions as stated before. Apart from the legal topic related to the task's definition for the road infrastructure management, the main topic is related with the organization of the institutions in charge of provide, respectively, network administration and

services' administration at regional level. Strictly linked with the previous topic is that of public employees' qualification, whose skills are not fully adequate with their tasks. As stated above, the outcome of this gap is a partial inability to administrate local road network and local road services at the level required by the needs of the transport demand.

2.3.4 Main findings, Railway's sub sector

As in the road case, the distinction between infrastructure and services is a useful way to better focus the sectoral issues.

The Ethiopian railway system has been completely revised by adopting a standard gauge and an electric power system. This led to the design of an Ethiopian National Railway Network with more than six thousand km length. The development of the network reached its first target with the completion of the Addis - Ababa - Djibouti line (which is an international link) and the AALRT, the light railway system inside the Capital city.

The governance of the railway system is the crucial issue of the sector: there are three different public companies (ERC, EDR, CDE), two are bi-national (JVs between Ethiopia and Djibouti) and one is domestic, the operations have been contracted out to private non-domestic entity in the debut stage of service providing. The only institution in charge of public responsibility is the MoTL, differently from other sector there is not a sectoral authority to support the political level. This last topic appears particularly important as the complexity of the railway system, which is similar to that of the aviation sector, requires a strong public supervision of the safety issue and of economic regulation.

Since the railway system is still in a state of primary development, the regulatory framework is not yet complete and this represents the second important challenge of the sector. The MoTL provided to establish a railway directorate and is designing the future rail authority, which, in a second stage of the process, will be in charge of the safety matters, which is a primary topic of the railway system. The economic regulation of the sector, the second crucial topic, will remain within the responsibility of the Ministry.

The development of the railway network requires considerable financial efforts. The first steps undertaken in Ethiopia showed great difficulties in maintaining traffic targets (and its revenues) hypothesized during the planning phase and this has led to a prudential attitude in taking further

efforts entirely borne by the public budget. Accordingly, as for other transport subsectors, the calling of private investors has been invoked in the planning and political documents as a the magic bullet able to solve the problem.

The issue of financial resources to support future railway investments directly refers to a risk assessment of each project and, consequently, to an institutional and economic framework capable of supporting the allocation of each risk to the subject more able to manage it. This issue, along with that of the governance previously exposed, are closely connected due to the type of guarantees which is possible to offer private to investors who want to enter a sector that is currently dominated by public enterprises (one of which is bi-national).

The issues highlighted so far can be well supported by similar sectoral experiences in Africa and worldwide²⁹. The main findings of these experiences can be summarised as follows:

- African Governments have given for a long-time absolute priority to road investment while neglecting railways;
- most of the rail infrastructure is inadequate for commercial exploitation;
- rolling stock is mostly inefficient;
- human resources are not being renewed and sufficiently skilled;
- regulatory framework is unable to incentivise the private's participation;
- political conflicts and natural disasters have damaged the existing lines and this hampered the private investors to put money in long term railway projects.

According to the above considerations, Sub-Saharan Railways need a deep restructuring in order to become a competitive means of transportation. In fact, they are affected by several issues that undermine their commercial opportunities while keeping private investors

²⁹ J.M. Villardell, Railway concession in Africa: Lesson learnt, AfDB Transport Forum 2015, World Bank; Modern Railway Services in Africa : Building Traffic - Building Value, 2020.

away. Moreover, new and existing railway infrastructure will require large financial resources, while most of the African countries are unable to cope with the financial and technical effort required. Accordingly, private sector participation should be considered to provide finance, skills and incentives.

Furthermore, looking at the international benchmarks outside the African continent, examples of private participation in railways shows that there are many different options for solicit the private sector resources to invest successfully in core, supporting, and ancillary services. The specific options to be implemented and the timing of their implementation are influenced by many factors, the most important of which are traffic on the network, maturity of institutional development, and the governments' affordability to implement the project. The latter, is particularly important as governments needs to be mindful of the obligations it may need to assume, in support of creating a sufficiently attractive project for private operators and investors.

Eventually, international benchmarks have a crucial role in the long-term scenario of African development that is the AfCTA. In this view, the interoperability (technical and administrative) of the national networks must be considered as a mandatory requirement for the development of international connections.

Despite the regulatory lacks described above, the essential legal basis in force allowed the debut of the first services, both passenger and freight. Passenger services are currently carried out within Addis Ababa (AALRT), by ERC, and between Addis Ababa and Djibouti by EDR, while freight services are provided on the AA - Djibouti route by the same operator. The operations of both the services have been carried out through management contracts, providing a phase in which the manager seconded its own employees to guarantee the service and provide for flanking and training of the local personnel. The first management contract concerning urban services has expired and the specific ERC organizational unit in charge of providing the service is operating regularly. The second management contract (between the Chinese contractor and EDR) although it allows for good service operations, recorded some slowdowns in the handover of functions and operational

responsibilities between the contractor and the company.

On the other hand, EDR is in a complex condition, being both the operator charged to manage the railway line by the two states that own it, and for the management of the services. The expectations of the two states did not foresee having to face further financial outlays compared to those originally foreseen, therefore EDR has difficulty in making investments in rolling stock that could allow it to expand its revenues.

A further relevant issue arising from the assessment is represented by the scarcity of qualified professional figures in the railway field, both for administrative/regulatory functions and for operational and managerial activities. For the latter topic it has to be firstly observed that a considerable part of the training programs planned by the Government and ERC failed to be operational due to delays in the construction of the Railway Academy buildings. Besides, while for some professional figures like drivers and train crews the training programs respected the scheduled time of the management contract (AA - Djibouti - EDR) for the infrastructure management area the lack of facilities, laboratories and equipment hampered the training (and the handover process). Moreover, communications skills by the (foreign) mid-level technicians seem to be hampered by a poor fluency in English.

Coming to the MoTL side, a similar gap has been assessed for the technical knowledge required to carry out the administration and the future regulation of the sector (see also the focused assessment in 3.4). These problems are a fairly expected gap, due to the short experience of sector operation in Ethiopia. However, this lack of qualified workforce, both at institutions and companies, hinders the capacity of the sector to exploit its potentiality of development.

Finally, the similarities between railways and aviation in terms of management complexity, safety requirements and financial issues should be emphasized. This final consideration suggests the usefulness of taking a prudent and long-term oriented approach to the development of the sector, which has been one of the cornerstones of the country's successful experience in developing its aviation sector.

2.3.5 Main findings, Logistics and Maritime sub sector

An in-depth examination of the country's logistics and maritime sector was recently done

by the government document on the National Logistics Strategy. The assessment conducted by

the Consultant substantially agrees the analysis of the NLS and aims at further specify some issues able to make clearer the future challenges of the sector. As in the previous cases of road and railways the distinction between infrastructure and services acts as a key of understanding of the sectoral context.

The main issue concerns the governance of the sector, that is to say the way the sector is administered by the public chain of powers 'Institutions/Enterprises' and the role of the stakeholders in this environment. In this case the NLS points out that the most important reasons behind the poor performances of the sector are related with horizontal issues, external to the "industrial logistics process" but concerning the trade and finance environment of the logistics activities. Trade and Finance priorities, together with excessive and cumbersome procedures for Transit and Customs processes, built a complex tangle of inefficient practices. Vessels and containers are used as warehouses than as transportation units, "the major causes of this problem are difficulties of coordinating disparate importers with fragmented operations and a shortage of supply of foreign currency. Regarding cargo dwell time on seaports and dry ports, the practice of using containers for storage is mainly related to the trading and finance system more than transport logistics"³⁰.

Given that the horizontal factors described above originate from the needs of a landlocked country and struggling with perennial tensions on the side of foreign exchange supply, the role of a public enterprise (ESLSE) as the sole system integrator seemed to be the only one viable solution and has undoubtedly produced results. However, the NLS points out that this conducted to many monopolistic practices that hampers the supply of logistics services at competitive prices. Particularly, the practices are both on the Djiboutian (container terminal management, bulk cargo operation terminal and oil terminal) and Ethiopian side (monopolistic role of ESLSE for import cargo - though not all the activities - multimodal operation and dry port services).

This leads to the second issue and to its classical remedy, that is, respectively, public monopoly and sector's liberalization. This means the opening of the logistics operation to private investors with the aim to finance new investments and introduce business innovation and skilled workforce/managers.

As stated before, for other transport modality, to make a market open to private investors means being able to build a supportive environment. To attract private investments in the present Ethiopian environment means design a framework for risks allocation of investment projects able to give adequate guarantees to the investor. The meaning of this general statement in the logistics sector requires to clarify if the domestic logistics terminals (dry port) will be open to all the future multimodal operators or, conversely, if they will have to build their own terminals to undertake business.

The evolution subsequent to the issue of the NLS seems to suggest that the model chosen is that of a competition between vertically integrated operators, that is, equipped with all the production factors of the logistics chain (terminals, cranes, warehouses, trucks and so on). In fact, some measures suggested by the NLS have been yet implemented:

- the creation of the National Logistics Council, aimed at coordinate all the logistics stakeholders,
- the creation of the Logistics Transformation Office, a focal point of the MoTL focused on the implementation of the NLS,
- the issuing of the Multimodal Directive,
- the issuing of the new FOB Directive.

The Multimodal Directive and the recent MOU between the GoE and DMP on the Berbera corridor suggests that the view of the future development will be based on a competition between operators having all the logistics factors.

In this view some questions concerning the development of the sector arises:

- which will be the status of the existing dry ports, presently owned by ESLSE?
- will the future multimodal operators have to build new dry ports competing with the existing ones to exploit business opportunities?
- how (and by who) will be developed the rail/road intermodality, which is not considered in the Multimodal Directive)?

From both the assessment and the above questions a further issue must be underlined: the scarce role of railways as a potential supplier of intermodal services. This gap is clearly originated by a double weakness: on one side the origin of multimodality concept in Ethiopia linked with its landlocked nature and, accordingly, with the absolute need to solve the problem of the Djibouti corridor, on the other side the absence

³⁰ FDRE - EMAA National Logistics Strategy 2019 p.31

of real railways service just up to a couple of years ago. While this issue doesn't seem to be now at the top of the list, a forward-looking approach can immediately capture the opportunities arising from the integration of road and rail systems, dry ports, industrial and agro-industrial parks able to supply a network of services to move goods throughout the country.

Another important issue is that concerning the qualification of sectoral human resources. The NLS clarified that this issue concerns different topics: lack of horizontal coordination between logistical institutions, poor competence of the workforce of the service providers, lack of managerial skills to organize and lead both the business activities and the institutions.

To this issue the draft of multimodal directive tries to give part of the solution by fixing challenging requirements to enter the market, both in terms of experience (both companies and personnel) and competences. The establishment of the National Logistics Council seems to be another part of the solution, establishing a coordination desk of the different (sometimes conflicting) policies involving the sector.

The diversification of ports is another crucial and well-known issue of the sector. Its importance lies in the land-locked country characteristic of Ethiopia and in its dependence on maritime sector for most economic activities and strategic issues. The identification of the ports to be given priority is strongly influenced by these external conditions, however the technical and economic criteria behind the choose are sufficiently clear: i) type and cost of infrastructural works (civil works, drainage, equipment), ii) existence (or not) of connections with transport infrastructures, iii) distance from main centre of economic activity (manufactures, agro-industrial parks, mines).

The two possible paths that the country can take are the purchase of shares of a port authority or the obtaining of concessions for the management of port terminals. The two possible paths that the country can take are the purchase of shares of a port authority or the obtaining of concessions for the management of port terminals. While the former is a direct

commitment of the state (normally through the signing of a Memorandum of Understanding with the country where the port is located) the latter can be taken on by a firm acting as an instrument of the country's will.

The great importance of maritime connections for Ethiopia results into the issue of the maritime fleet. The country intends to maintain an independent shipping capacity through the ownership of a fleet, although this approach involves loss-making economic management. This duty is entrusted to ESLSE, which owns and manages the Ethiopian ships and bears the operating losses, financing them with the profits of other economic activities along the logistics chain. This argument has already been underlined above with regard to the dominant role of the firm, suggesting that this situation is not only the result of a sectoral evolution but an informal compensation for the burdens incurred for the fleet management.

All the issues raised above, including that concerning the governance of the sector, refer to the role of ESLSE, the public enterprise of the sector. It is frequent that public enterprises are required to have multiple objectives in addition to those of developing a particular business. Often, in fact, these companies have already or have developed over time an organizational structure, technical and managerial skills and a timeliness of action that the public administration does not have or has very partially.

ESLSE plays a pivotal role among multiple and relevant public interests, not only internal but also external to the sector: guaranteeing strategic supplies, controlling (indirectly) the flow of foreign currency, functioning of the logistic chain for the economic activities. These joint commitments and the way in which the firm plays the role are based on its monopolistic power. If the future framework is based on the action of multiple logistics players, the current ESLSE's scope has to be revised by including the new players in the scenario and by supporting ESLSE with an accurate review of its mission.

2.3.6 Main findings, Aviation sub sector

The first result of the sectoral assessment is that the development of the aviation sector in Ethiopia is a successful case. It is an example of a long-lasting process, which started from scratch and has achieved a considerable international positioning and a leadership in Africa; this result

is the basis for further assessments. That is to say that instead to focus on the gaps to be filled, part of the analysis is addressed on how the objectives achieved in this sector can help progresses in other transport sectors.

The aviation sector is international by nature and has an administrative/regulatory framework to be respected in order to access the network of international connections. This means that the success of Ethiopian airlines is not only the creation of a competitive international company, but it is also the successful development, over time, of technical and regulatory bodies (ECAA primarily) able both to cope with international standards and build positive relationships with the international sectoral institutions.

The development process of Ethiopian Airlines has requested a long period of growth of technical, managerial and market skills³¹. It is useful to remember that the first phase of development of the company took place with TWA technical support through several agreements between the latter and the domestic company (see the table below).

³¹ A. Oqubay, T. Tesfachew, The journey of Ethiopian Airlines, AfDB Papers, HDI Volume 2, Issue 1.

Table 15: EAL - TWA agreements

Agreement	Year	Key content
First	1945	Established EAL, undertook full operation and the procurement of aircraft
Second	1953	Stated clearly the ultimate objective of Ethiopianization
Third	1959	Reinforced the urgency of the Ethiopianization agenda
Fourth	1966	Transferred management from TWA to EAL and appointed an Ethiopian deputy CEO
Fifth	1970	Shifted TVVA's role from management to advisory until 1974

Source: A. Oqubay, T. Tesfachew, *The journey of Ethiopian Airlines, AfDB Papers, HDI Volume 2, Issue 1*

Through the process already mentioned EAL has grown to become the most important company in the country. The essential role of the company for Ethiopia can be easily described just mentioning its contribution to: i) foreign currency supplying and, ii) trade balance flows (services). These crucial aspects are largely systemic and horizontal, more than sectoral. In other words it seems that the transport sectoral implications are of minor importance compared of that related to the macroeconomic dimension.

Coming to the sectoral issues it is possible to say that:

- the international positioning of EAL is largely managed autonomously by the company;
- the airport network managed is based on a unique international hub (Addis Ababa) and a number of domestic hubs;
- the dimension of the domestic market is still limited;
- the dimension of cargo business, though its strategic role for certain activities/business, is still limited.

On the basis of the previous considerations, it is possible to highlight some important issues concerning the institutional/legal framework and related to the transport planning activities.

Given the low private motorization rate of the country and a railway network at its early stage, the development of a set of domestic connections could be an interesting tool to enhance the country's transport system. Presently, the domestic market is less profitable for EAL and at an early stage of development. In a long-term planning, EAL could play an adverse role, looking mainly at the international scenario and neglecting the development opportunities on the domestic side.

The role of the public enterprise is so pivotal that it seems difficult to separate, even on one aspect only, the interest of the enterprise from that of the country, as the merger of the airport management company into Ethiopian Airlines demonstrates. In this case, in fact, the driver of the merger has been the need of EAL to face the challenge of international competition through a direct control on the quality performances of

Ethiopian airports (mainly Addis Ababa). This way to align the level of service to that requested by the international quality standards (i.e. the ownership of the airport services provider) is rather unusual for the sectoral practices but allowed the company to reach the target.

In the aviation sector it is clear that the intervention chain 'Authority → SOE is biased towards the public enterprise. In fact, despite ECAA has made tremendous effort in developing Air Navigation Services and in creating strong links and entering into agreements with many countries, creating favourable conditions for the development of the aviation sector, its regulatory action is strongly influenced by the political and financial weight of EAL. Aspects such as the aforementioned merger of airports within the airline company or the de facto absence of any control over tariff policy in the domestic market indicate a clear shift towards the public enterprise of the power to determine sectoral policy. In addition to the foregoing considerations there is another issue suggesting the need to strengthen the Authority's competences and endowments in view of a scenario of progressive market liberalization.

The development of the sub sector has also benefited of the institutional framework's continuous improvement. The new agenda for the African continent depicts a scenario of progressive opening of transport services in view of create a fair trade and economic space at continental level. Over time, the permanence of the competitive positioning of the flagship company can no longer be played on bilateral agreements but can also be based on an institutional leadership. The experience and competence gained by the Ethiopian civil aviation will be one of the levers to maintain the position of advantage currently affirmed by the successes of the Public Enterprise.

On the domestic side, besides the AfCTA perspective, the approval of the new investment regulation changes the rules of market access and depicts a new scenario which allows private operators to enter the market of domestic services. Under this perspective, the control on

airports development (and management) set the company in a pivotal role to plan timeline and direction of the investments and, moreover, to protect its profit from an high growth of not profitable routes.

Accordingly, and given the practices of liberalization of the market stated for the aviation sector, a reflection is needed on different options to develop the Ethiopian domestic market.

A further issue arising from the assessment is that of the possible role of EAL's best practices to enhance the competence of other public enterprises. This opportunity comes from the important experience cumulated by the company

during its trajectory of growth in terms of progressive acquisition of knowledge, skills and managerial competences.

Beyond the different technical contents, the experience in terms of learning curves development, safety/marketing processes, career's management, could be of extreme interest for other public enterprises facing their early stage of growth or a reorganization of the business environment. Moreover, the training and recruiting models and even the detachment of management, could have a positive effect for other public enterprises.

2.3.7 Main findings, Inland Waterways sub sector

The most relevant issue for the inland waterways sector concerns sectoral governance, and precisely who will have the role of developing the service offer.

On the basis of the constitutional principle, the construction of the plants (river ports) is the responsibility of the Regional States (therefore the local offices competent in transport works, the RRAs) while the supply of services would fall on the market, subject to the authorization of the competent local offices. On the other hand, the most important case, that of the LTA on Tana Lake, suggests that both the construction of the plants and the provision of services are employed by a single (public) company. For the latter company, there seems to be an orientation that foresees its merger within ESLSE, confirming for the latter company a role of "problem solver" on behalf of the public administration.

The second issue is one of horizontal kind and concerns the planning of the use of the rivers, which are not only a transport route but above all a crucial resource for agriculture, local

communities and tourism development. A place of coordination, in which all these needs can be considered and ordered on the basis of explicit priorities, seems necessary. The current Basin Development Authority, although its mission does not explicitly include uses for transport purposes, seems to be the most appropriate institution to manage the set of needs mentioned above.

The third issue concerns the early stage of development of the sub sector, so that many basic requirements are still needed to enter a further stage. Some legal basis needs to be established, reinforced or clarified in the field of navigation rules, for the safety related topics and for the insurance system for service providing.

These kinds of improvements can be set up without implementing a new structure of sub sectoral governance which is an issue that can be tackled after a first period of development, by an assessment of the experiences carried out in different places/different projects.

2.3.8 Main findings, Urban Development sub sector

As far as urban development is concerned, many of the most relevant issues have been highlighted in the case of the road sector. In particular, a problem concerns the quantity of services to be offered (and planned) in the major cities, also in relation to the objectives set by the TYP for cities over 50,000 inhabitants. This issue, as already mentioned in many sub sectoral reports and described at overall level at the end of this report, has a connection with the national manufacturing sector and its current inability to serve the demand of mass transport vehicles (buses, light rail).

As in other sectors already addressed, the main theme ends up being that of governance, that is to say how the sector is planned and managed taking into account all the contributions, public and private, of the parties involved. In this case, the dimensions of this theme are more than one. First of all, for urban development, land use planning and the planning of the movements of citizens and goods come into play. On this point there does not seem to be any awareness of the need to adopt a joint approach and the strong risk is that of witnessing a disharmonious development that is unable to provide answers of

adequate quality for the quality of life. A scarce sustainability of the choices of land use and settlement of production and housing sites, not coordinated with the foreseeable movements of goods and people, will produce negative impacts of the transport sector in terms of pollution, emissions, congestion.

Secondly, in the field of transport, local authorities still do not seem to be aware of their role as key actors in transport planning. Intervention tools still need to be developed allowing the administrations to manage current and future transport needs through a multiplicity of solutions (market, tariff compensation, service obligations, concessions), including co-existing ones. The sharp increase in mobility, both urban and between major cities, needs institutions capable of planning the supply of collective services and designing and managing adequate tools to meet demand. The current regulatory framework and the boundaries of administrative competences are not in line with these foreseeable developments in mobility flows

On a longer time, a sustainable mobility oriented approach appears to be not only unavoidable but embedded in the landscape of the policies of the country. The adoption of sustainable mobility plans (SUMP), at least in larger cities, is a direction to be taken and institutions must be able to implement this type of planning. Besides, these aspects will also have to be consistent with the expected growth in mobility along the transport corridors, on which the most intense movements of people and goods will focus.

The third dimension of the problem concerns the adequacy of the staff of public institutions to face the problems we have mentioned. In the part 3.4 dedicated to the issue of capacity building this aspect will be addressed in more details. Now it is sufficient to highlight the fact that there is a quantitative insufficiency in the staffing of these institutions when compared to the tasks that will have to be carried out in perspective.

2.4 MAIN CRITICAL ISSUES GROUPING THE SECTORAL FINDINGS

The previous part provided an analytical assessment of the institutional and legal framework of the Ethiopian transport sector. The assessment followed different point of views, not only through a sub sectoral analysis but also having a look at the different level of the governance: federal, local and horizontal. Eventually the part provided a summary of the main findings following a sectoral view.

The last phase of the assessment consists in grouping the main results of the evaluation in transversal matters, common to all or almost all sectors, in order to have the basis for the formulation of policies and/or measures, which are accompanied by infrastructure investments described in other parts of this report to establish the strategy of future intervention in the transport sector.

In order to proceed with the grouping of the sectoral findings it is preliminary needed to remind that ensuring the socio-economic progress and quality of citizens' life is the basic requirement of the transport system. Here accessibility is the leading concept, that is to say to provide the possibility of use infrastructure and services to satisfy the mobility needs of people and goods. The principles of the Constitution, while allocate the responsibilities of development, administration and regulation of

different ways of transport to Federal or Regional State level, rightly leave to the ordinary laws the task to define how all these modes of transport have to be developed, administered and regulated.

For a long time, the Ethiopian transport system was managed according to an intervention model based essentially on public actors. The country's rapid development has projected Ethiopia onto a path once considered unlikely, making the goal of becoming a low-middle-income country credible. For the transport system this process means adapting its way of operating, planning an evolution that gives private operators a greater role than in the past.

The main issues which include the sectoral findings of the assessment describes the main hampers that the Ethiopian transport system has to overcome in order to adapt itself to the new development scenario. The issues are the following:

- Governance of the sector
- Role of private sector
- Transport sector's growth and the strategy of industrial development
- International links/connection

In the following part of the report each of this

2.4.1 Governance of the sector

An issue that has been pointed out in the sectoral assessment concerns an incomplete capacity of the public intervention to fully carry out its tasks. In this sense, we can define this aspect as a sector governance problem. In turn, this problem has multiple dimensions: i) purpose of the public intervention, ii) organization of institutions (in a broad sense i.e. including public enterprises), iii) distribution of powers among them, iv) quantity and quality of the public human capital. In this part of the report, we will deal with the first three dimensions, while the fourth will be discussed later in the part of the report dedicated to the institutional capacity building.

The sectoral issues that shown gaps in defining the public intervention, its organizational structures and the balance of duties among them has been grouped following the different level of intervention which has been used in the assessment: Horizontal, Federal, Local.

The Horizontal level means that factors predominantly external to the sector act. This is the case of Logistics, where a decisive contribution to the poor sectoral performance is due to the influence of currency, trade and customs factors, which in turn are managed by different political authorities led by different priorities. In the same sector, also port diversification is influenced by geo political considerations, that means relationships with neighbouring countries and the related economic interests and clusters.

A similar case occurs in Inland Waterways, where the opportunity to develop mobility services has to be coordinated with external issues influencing the management of the water resource, as agriculture, wastewater treatment, energy uses and local community interests.

The case of public enterprises' supervision allocated to a body outside the sector also falls within this group of problems. The supervision of EAL and ESLSE was already entrusted to PEHA, now, according to the new Proclamation which defines the powers of the various ministries, all public enterprises in the sector (excluding PSETSE) are supervised by PEHA. This Administration does not elaborate sector policies but, rather, guidelines on accounting, financial policies and management procedures. The latter are important and reflect the point of view of the real shareholder, but the fact that the supervision

issue will be described.

is carried out by the 'shareholder' Minister and not by the 'sectoral' Minister weakens a sectoral view on how public enterprises takes their decisions and how they implement the government's policies of the sector.

Coming to the Federal level, the assessment at MoTL revealed that the planning process has a 'bottom up' procedure, that is MoTL collects from the sectoral authorities the investment proposals which, in turn, come almost totally by the public sectoral enterprises. In this way, as the axle of intervention 'Ministry - Authorities - Public Enterprises' is always under the umbrella of the public ownership and control, the coherence of the investments with the public strategy is given by definition through the top management's loyalty to the political guidelines.

The MoTL's planning process succeeded in delivering a transport investment's program for each sub sector. Moreover, many policies and guidelines have been drafted and established (for instance the TYP mentioned 23 different "Programs/Strategies and Institutional Capacity, Policies and Strategies to Implement"). It is easy to see that the number of specific policy documents or strategies to be implemented is very large for the present quantitative structure of the body. Furthermore, as each of the implementation plans will require not only a budget, but also time, staff and organizational efforts, it is easy to understand that this very broad set of tasks that must be coordinated and verified by the Ministry can likely lead to difficulties in carrying out these activities.

Moreover, the NTS (May 2020) makes clear statements about the role of the MoTL as an apical centre of coordination of the whole transport policy and as the responsible of monitoring and evaluation of its implementation. In fact, it is clear that the Ministry is the sectoral pivot of the connections between the different levels of the transport policy implementation (international, horizontal and internal, through the coordination of Federal and Regional States duties).

These considerations lead the reasoning on the aforementioned intervention model based on the control chain 'Ministry → Authority → Public Enterprise'. In terms of number of employees, the Ministry has a 10,6% share of the total Federal administrative workforce of the transport sector, excluding ERA (MoTL, former FTA, ECAA, EMA, RF,

IFAA)³². This imbalance was then partially modified by two factors: i) the new definition of powers and duties of the Governments and the repeal of the FTA, whose competences will be reallocated within MoTL, ii) the handover of the supervisory responsibilities of ERA between the MoTL and the Ministry of Urban and Infrastructure. While it can reasonably be assumed that the technical expertise of the FTA will remain within the scope of the MoTL, the transition of ERA under the supervision of the Ministry of Urban and Infrastructure represents a serious loss of qualified human resources from the Ministry's area of expertise

Looking at the control chain described and given the resources managed by the concerned bodies, it is rather clear that the ability of the MoTL to design policies and check its implementation is not fully effective. On the contrary, the bigger part of work seems to be centered on the couple Authority → Public enterprise. Depending on sub-sector's conditions the task implementation can be (in real terms) allocated on one or another actor and only in case of lack/absence of the couple Authority → Public enterprise, the task come back to its natural owner as in the railway case. The latter subsector is a complex industry, which requires both technical and economic skills to administer and regulate it. The first cornerstone was laid with the establishment of a specific Directorate but the next step is the creation of an authority responsible for rail safety whose functions are currently still inside the MoTL.

In the aviation sector, although administrative and regulatory tasks have long been established at MoTL and ECAA, the center of gravity is not at MoTL, nor at ECAA, but at the public enterprise. In fact, EAL, being the most important company in the country, enjoys a high degree of autonomy, due both to good economic results and to a field of action where rules and behavior are mainly decided at an international level.

Despite the MoTL has the formal role to direct and coordinate the executive/regulatory bodies it has not an adequate organization to do it practically. To carry out this key assignment the Minister has the power to appoint the top managers of the Authorities (and in some cases of the public-owned enterprises) and the powers (and skills)

coming from usually being personally a former Chairman of the Board. The structure of the Ministry, in itself, is not fully and systematically involved in the discussion about the strategic decisions of each Authority and the offices does not have the key knowledge to engage a dialectic relationship with a specific Authority or Public Enterprise. Moreover, the weak technical and economic capacity of the ministerial structures to make independent review or investigations about the choices to be done, makes this decisional centre depending from the chain Authorities → Public enterprises. Moreover, as pointed out above, all transport public enterprises are now not under the supervision of PEHA.

The issue of the local level of governance involves exclusively Roads and Urban development sectors. Apart from the problems regarding human resources, the assessment pointed out two critical dimensions, concerning, respectively, lacks in the mission/scope definition and adequacy of the organizational structure. As described in the part focused on the main sectoral findings, these two problems are related with:

- the subdivision of powers between federal level and Regional States;
- a gap of awareness of local powers of the extent of their mission which is not only of administrative but also of planning local infrastructure and services.

The first topic illustrates the fully independence of the regional authorities in defining their detailed scopes and organograms, while the second points out the multidimensional role of the public intervention at local level.

The problem seems to be more serious in terms of service providing rather than on of infrastructure building and maintenance. The latter is more well-known and some local authorities, with the support of the federal level (MoTL and ERA) are developing practices to improve construction management and road maintenance. Moreover, international programs of technical assistance are ongoing to improve the organizational structure at local level.

On the field of passenger transport services, there seems to be a low awareness that the adequacy and quality of the offer of these services are within the administrative duties, especially looking at the growth of road network and at the future increase of both the transport demand and the urbanization trend. The new mobility scenario, particularly for the areas involved in the development corridors, requires a pro-active model of intervention allowing an

³² As ERA is by far the bigger administrative body of the transport sector, with more than 5.700 employees, it has not been included in the calculation which consider a grand total of 1518 people. A different evaluation, considering ERA in the calculation with a grand total at 7288 people, would make the shares of all the other transport administrative bodies vary from 0,5% to 8,3%. See 3.5 for further evaluations on this matter.

important increase of service providing. This, in turn, calls for a new approach to the planning of transport services, starting from the citizen's needs. An approach as the one described is not currently adopted by the competent local administrations, which act on the basis of a minimum administrative approach, based on licensing and approval of tariffs.

Furthermore, the increase in mobility, both urban and between major cities, will soon require institutions capable of planning the provision of collective services while, the regulatory framework and the current administrative skills of local institutions are unable to address these problems. The Proclamation 1231/2021 on the System of Inter-Governmental Relations could constitute the environment within which a specific legal framework that addresses these issues can be discussed and deliberated.

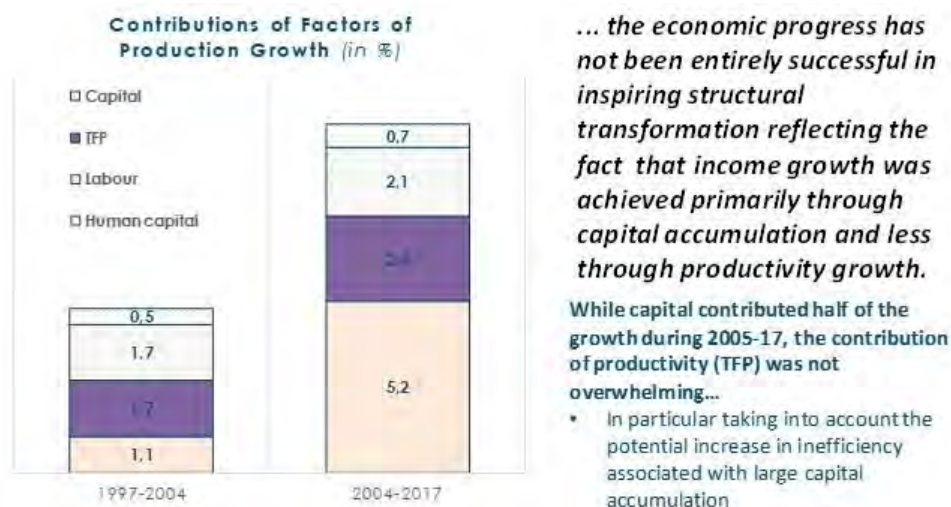
2.4.2 Role of the private sector in supporting the transport sector development

The private sector is present in the Ethiopian transport sector but its role has been essentially ancillary to the public enterprises. Private operators provide their activities mainly in road sector, both from construction and service providing side. Local contractors in road constructions have increased their scope, but big and complex projects are still awarded to foreign contractors. In freight services the presence is limited to the unimodal services while intermodal are still reserved to the public enterprise. In passenger services few large companies (some public, some private) coexist with many small minibus companies and with the so-called paratransit sector. In the aviation field, some small companies are active, providing charter services, helicopters, drones and other auxiliary services

The issue is not only local but also affects the federal level. The aspects of quantity and quality of transport services provided by economic operators appear to be little supervised. The FTA (now dissolved) did not issue any guidelines or instructions able to set the framework of the economic and technical requirements to meet the mobility needs of citizens. Accordingly, at local level, the activity of license issuing to economic operators (public or privates) to provide transport services is strictly limited to general or purely administrative requirements and does not have to meet minimum standards nor be compliant with planning targets. It will be now up to the MoTL, which will be in charge of the duties of the former FTA, to meet with these kinds of needs.

like baggage handling, catering or cool storages. The sector is dominated by EAL Group which controls also the whole chain of airports development and management. Logistics services are still reserved to ESLSE which manages the main part of the logistics chain from multimodal services to dry ports. Private operators act as ESLSE's supplier or provide trucks services, mainly engaged by a private forwarder. For shipping services, ESLSE manages the national fleet and global operators provides services on the main international routes to the ports interesting Ethiopia (mainly Djibouti). Railways, though they are not legally reserved to public enterprises, are practically managed by the State (ERC) or through a bi-national joint venture (EDR, CFE).

Figure 14: Weaknesses of the Ethiopian recent development path



Source: Elaboration on FDRE Office of the Prime Minister - A Homegrown Economic Reform Agenda: A Pathway to Prosperity – September 2019 Figures 17 and 18

If the country's economic development has so far been mainly the result of public action, now this model seems to have reached its limits. Many public enterprises are unable to increase their productivity and, moreover, a large part of public investments do not generate the expected income. (see Figure above).

This analysis grounded the Homegrown Economic Reform Agenda of the FDRE Government, which pointed out the guidelines to reform the SOEs: i) reinforced control of new debts, ii) strengthen of SOEs' governance and management, iii) privatization. The first two programs are under the complete control of public powers, while the latter involves the participation of the private sector both of domestic and foreign kind.

In addition to its role as an active player in the SOE privatization process, the private sector is also called upon to support the country's investments, which will require around 2.3 trillion ETBs over the next ten years. According to TYP data, the financial support of this amount should be 47% from the budget of the government/public banking system, 14% from foreign loans, 2% from foreign aids and 2% from the internal revenues of the investments. The remaining 35% should come from private financial entities³³.

In summary: the lack of entrepreneurial skills and financial resources is the reason for calling for a

decisive strengthening of the role of the private sector in the transport sector. Therefore, given this concise judgement, the dimensions of this issue from the institutional/regulatory point of view appear to be the following:

- managerial/technical sectoral skills;
- providing of financial resources;
- regulatory framework improvements.

As regards the first topic, the main beneficiary subsectors seem to be logistics and railways. Both are complex sub-sectors that require significant technical and managerial skills; in both sub-sectors the issues of integration of production processes, management of relationships with suppliers and customers, are crucial; furthermore, the use of ICT and digitization development represent a strong innovation trend to be managed. However, the road sub-sector is also a field in which the entry of qualified private operators can lead numerous advantages in terms of technical, organizational and managerial capabilities. The lack of qualification and managerial skills at local level represents a strong obstacle to the performance of construction and road maintenance business. Also in the aviation sector, in which the management capacity of EAL is not under discussion, the contribution of the private initiative could focus on domestic activities, collateral business and/or reduced economic dimensions, without weaken the global competitive challenge of the national enterprise.

As for financial matters, the size of the effort required is potentially huge. A first point of discussion concerns the financial dimension of the

³³ FDRE, Transportation sector Ten year development plan (2013 - 2022), November 2012 (EC). Percentages are calculated on Table 4 data.

investment projects involved: in the case of funding of large projects, with long times of realization and operational/productive complexities, it is very likely that the international dimension of investors would be completely predominant. It is the case of railways, expressways and federal roads, dry ports construction, multimodal operations/corridors, bus rapid transit systems. In addition, investments in new vehicles, especially roads, will constitute an important part of the financial effort of the next decades, which will be divided between the private sector and public finance. However, the investment needs of the transport sectors are not limited to large projects: the completion and strengthening of the local road network, the passenger terminals, inland waterways terminals and services, road maintenance services, management of dry ports, require less heavy financial investments.

All these kinds of projects could benefit of different kind of financial sources, not only the traditional one (international donors and/or public budget) but also the mobilization of Diaspora's and domestic savings. This involvement would be of particular importance not only because it would add another financial source but, above all, because it can mobilize the potential of entrepreneurial skills trained and developed abroad. They could contribute to the evolution of the economic environment of the country, particularly those who are interested in the country's long-term development. This, in turn, would have beneficial effects on the rooting and on the spread of an indispensable entrepreneurial culture for the new phase of development of the sector.

Regardless of the financial dimension of the projects, each investment requires an analysis of the risk of the project; it is at this stage that private operators compare the attractiveness of alternative choices of invest their financial resources. It has to be noted that some projects financed by foreign operators (railways, roads) have highlighted problems in the mechanisms of debt repaying, caused by non-accurate risks analysis/allocation. In cases where the participation of public and private entities is required, as in the PPP schemes, the risk analysis drives the risk allocation process on each player able to better bear and manage it (State, public company, private operator). It is commonly known that for these kinds of analysis, risks are grouped

into different clusters, describing the different degrees of manageability by the private investor³⁴.

Normally, market/entrepreneurial risks, depending on the competitive scenario, are allocated to the future manager of the business, the same occurs for the construction risks linked to the capabilities of the builder. Another group of risks is commonly related to what is called political/regulatory risks which can also include all the issues related to the country's rating. All these risks, as they are not under the control of private parties, are generally assigned to public subjects which are in charge of manage it.

Under this point of view the case of Ethiopia is common to all those cases of countries which are undertaking an economic transition based on an opening of the markets and on a review of the scope of the public intervention. This is because these kinds of process call for both a deep review of the regulatory framework and a review of the scope of the public enterprises, formerly established and grew in a monopolistic position. As this kind of process normally takes a certain time (sometimes many years), the risks perception by private investors depends on their opinion about the robustness and the trend of the process.

The Ethiopian Homegrown Economic Reform Agenda is moving forward, but there are many steps to be taken. For our purpose it is useful to distinguish between Horizontal Factors and Sectoral Factors, the first being all factors linked to: i) the financial framework in force of FDIs and ii) the general framework of competition rules. The second kind of factors are related to the economic regulation and governance of each transport subsectors.

The horizontal factors are, in terms of sectoral planning/strategies, outside the scope of a Master Plan, rather they represent exogenous variables. However, an important emphasis must be made regarding the legal framework concerning the competition rules as in the future scenario of the sector, public and private companies will interact in the same economic field. For this reason, the way in which any situation of dominant position by public enterprises will be assessed and managed by the

³⁴ See, for example, D. Grimsey, M. K. Lewis in "Evaluating the risks of public private partnerships for infrastructure projects", *International Journal of Project Management*, 20 (2002). The authors point to nine risks related to PPP for infrastructure projects: i) Construction risks, ii) Commercial and market risks, iii) Revenue risks, iv) Operational risks, v) Financial risks, vi) Environmental risks, vii) Risks of force majeure, viii) Political / regulatory risks, ix) Project default risks .

competent authorities will be an important indicator of the attractiveness of future investments. If the assessment will be conducted in a transparent and fair manner, no one will be able to suspect a pre-oriented judgment in favour of the public operator and the willingness to invest will not be negatively affected by the suspicion of systematic unfavourable treatment against private operators. In a wider way it can be said that clearness and robustness of the framework of the competition rules is a positive factor towards the participation of private operators to the economic life of the country.

Other horizontal factors, as the country credit rating, the level of currency risks, issues of non-convertibility or transferability of the local currency and, with a wider scope all the issues concerning the perceived political and social stability of the country are, of course, very important but must be considered as exogenous for the master planning.

Moving on to the regulatory framework and given the horizontal factors mentioned above as exogenous, the question to ask concerns the way in which the transport subsectors are to be opened up to private operators. This issue appears to be not fully focused by the political level.

The two theoretical hypotheses within which the topic can be framed are: i) opening the market by completely privatizing the monopoly public company or, ii) opening the market to all companies, public or private, interested in the business. These two extreme alternatives draw a very large space within which policy-makers must seek the solutions that are best suited to lead the development of the transport sector.

The possible solutions have to be found starting from the kind of sub sector and its technical/economic features.

For example, in the railway case the range of possibilities varies from a competition between vertical integrated companies managing alternative routes to the competition of different providers of transport services using the same infrastructure. The opposite extreme is a block sale of the two enterprises presently in charge to provide infrastructure building, network management and transport services³⁵. Up to now the privates' contribution has taken the form of financing infrastructure building (loans) and providing temporary management services (management contracts). In this sector, it is very

clear that individual projects must be supported by a rigorous risk analysis and, moreover, that this type of analysis is based on a common assessment of the sectoral risk, to avoid a non-homogeneous assessment.

In the road sector there are many possible options for the entry of private operators, both for the construction of infrastructures and for the provision of services. The case of the expressway Addis Ababa - Adama, along the Addis Ababa - Djibouti corridor, was partly based on a private loan (57%) for the construction of the infrastructure, without any involvement in the management activity, although, in a first phase, the tolls revenues should have been intended to repay the debt³⁶.

Any approach must combine the technical and economic characteristics of the sector and the objectives that we want to achieve with the entry of private operators. If, as mentioned above in general terms, the purpose of the entry of private operators in the sector is to have both financial resources and managerial skills, then the regulatory framework must be adequate to allow them a stable, long-term presence. On the contrary, if the objective is purely financial support, then the regulatory framework must allow the possibility to grant the investor guarantees of profitability and reliability higher than those of alternative investments.

On the basis of the considerations made above, it is clear that the contribution of private operators to each subsector will have to take place on the basis of the development guidelines that the political decision-maker will have to elaborate. For each sub-sector, in fact, the objectives are different even if they can be summarized in the categories mentioned above: investment financing, strengthening of the sectoral entrepreneurial culture.

This means that, for each subsector, it is necessary to indicate which specific objectives you want to achieve through the entry of private operators and how you intend to adapt or improve the regulatory framework to allow the achievement of these objectives. Moreover, it is crucial to define an appropriate timescale of these kind of processes, possibly according with the status of each sub sector and its complexity.

Last but not least it is clear that defining a reference framework for private investors in each transport subsector brings with it the revision of

³⁵ On this topic see also the Railways sectoral report.

³⁶ Three expressway projects along the same corridor are included in the list of potential PPP projects issued by the MOF.

the role of the public company acting in that specific subsector, and this, in turn, requires to check the consistency between the mission,

2.4.3 Transport sector's growth, industrial development and innovation.

The issue described in this part of the report connects the transport sector to the wider economic sector of the country.

The growth of the transport sector in Ethiopia has been strongly but not exclusively focused on the development of roads. This growth has been one of the main development factors of the country, as transport infrastructures were been identified as one of the key factors to reduce poverty and increase the quality of life of Ethiopian's population. This path can be considered as the first of the three possible dimensions of the relationship between the transport system and its economic environment, the others being, respectively, the relationship between sectoral growth and economic development and the innovation process.

The result of the assessment is that only the first dimension is well centred, that is to say that the transport system effectively performs its task of being the logistic arm of the progress of the country, guaranteeing accessibility to primary services and markets. On the contrary, the remaining two dimensions seem neglected or poorly exploited.

The analysis pointed out some important problems: a lack of equipment/machineries for infrastructure (build and maintain), a lack of road vehicles (passengers and freight) to match the present and, particularly, future demand, a lack of railway rolling stock to provide rail services. The domestic industry of all these products is unable to meet the demand arising from infrastructure development and mobility demand and, furthermore, does not appear to be able to do so in the near future. Most of these needs is met by foreign suppliers, for Ethiopia this means trade imbalances and growing needs of foreign currency to settle payments.

The excess of demand compared to the level of domestic supply, if it is now a source of imbalances, could be a great development opportunity since it constitutes a captive demand basin that could be directed towards a domestic-based production system. This well-known concept is the second dimension, which connects the exploitation of high sectoral growth rates to support the growth of the domestic industry. Although the domestic manufacturing industry linked to land infrastructure or automotive has

objectives and scopes of activities to make them compatible to coexist with the activities of private operators.

been unable, up to now, to keep up with the pace of growth, the opportunity does exist.

The industrialization strategy implemented by both the past and the new government didn't change over the years, it has been based on three pillars³⁷:

- light manufacturing,
- basic and import substitution,
- strategic sectors.

The second element is fully in line with the considerations made above: both civil works machineries and automotive products are important components of the national import. In fact, despite some recent joint ventures established with foreign manufacturers, these industries currently appear unable to serve as a true alternative supply channel. Both industries are not at the top of the priorities of the national industrialization strategy. This seems to suggest that the vision of the transport sector is limited to a role of pure logistic tool while the second dimension of the problem, namely the exploitation of its demand potential, is neglected.

The exploitation of the development potential deriving from the demand for infrastructures, machinery and vehicles suggests the topic of innovation. According with UNCTAD's Ethiopian Innovation Policy Review³⁸, "rapid economic growth in Ethiopia did not promote structural transformation. As a result, the opportunities available for technological learning, innovation and skills formation by shifting resources into high-productivity and high-tech activities across and within sectors were limited". However, although the country still depends entirely to technologies and skills external to its national system, in a long-term perspective this situation may have changed. One of the objectives of the Home-grown economic reform is, in fact, the creation of a favourable political environment for the development of productive capacities and the strengthening of national private companies, overcoming macroeconomic imbalances, loosening structural constraints and creating both new investment opportunities and sources of growth. A potential development trajectory in

³⁷ A. Oqubay, Ethiopia: The Emerging Manufacturing Hub of Africa.

³⁸ UNCTAD, Ethiopia. Science, Technology & Innovation Policy Review, 2019.

this field appears even more conceivable when considering the growth scenario of the whole African continent within the AfCFTA framework and the prospective positioning of Ethiopia in this area.

The transport sector is characterized by important innovation clusters, in which telecommunications technologies, developments in Artificial Intelligence and applications on new energy sources converge. The concept of an intelligent transport system (ie applications that apply information and communication technologies to transport) is common in the world of transport. These trends are rapidly changing the way the industry works. It is useful to briefly recall some possible examples to understand the potential offered by innovation in the sector.

In the field of infrastructure construction, Computer Aided Design is now complemented by a virtualization of the entire chain of activities, from design to testing. The use of Building Information Modelling (BIM) makes it possible to detect and solve in advance all the potential overlaps between activities to be carried out, physical objects and production processes. Even in maintenance, this approach makes it possible to improve the process and, together with Internet of Things (IoT) technologies, it changes its point of view, favouring the spread of preventive approaches instead of reactive ones. In the field of transport service providing, there are many potential applications that can improve the relationship between customers and service providers: from common ICT apps to the IoT, The examples of the development of e-commerce or the concept of Mobility As A Service are paradigmatic of this process.

The future positioning of Ethiopia in the production of green energy constitutes an opportunity for the country to develop collateral businesses such as, for example, that of the energy transition of fuels for transport vehicles. With different degrees of maturity, hybrid, electric or hydrogen engines are the frontier of development and applications for land transport are already in operation. The growing demand for road and even rail vehicles in the country constitutes the second factor that could trigger a development in this field, allowing the country to be a potential provider not only of green energy but also of green fuels and green vehicles for the African continent.

Another possible field of development involving the transport sector is that concerning the aerial/satellite services for agriculture and disaster prevention and management. As Ethiopia

has an important agricultural sector and an increasing population, the development and supplying of services able to improve the ability of farmers/rural collectivities of manage their activities could represent an answer to a potential demand. On the supply side, transport economic operators could undertake some steps towards this path and this should be made possible and incentivized by a political will which is currently in action. In fact, a National Space Policy does exist and the Ethiopian Space Science and Technology Institute (ESSTI) just provided to launch two satellites in collaboration with China's specialised agencies. Moreover, a specialised plant, focused on manufacturing, assembly, integration and testing of satellites' components is under construction in JV with the French Ariane Group.

This public policy can be an opportunity for economic operators of small medium size, active in the aerial services or unmanned air vehicles to develop services to Regional Governments, local communities, agribusiness operators, both public and private. These kinds of business opportunity could benefit of the results of the national policy by transforming data and information coming from satellites, coupling it with a denser sampling of aerial observations and providing services capable to enhance the productivity of agricultural sector or improve the ability of preventing/managing catastrophic events.

It is hardly necessary to point out that the possibility of developing some of the examples made above or even other similar opportunities, requires two fundamental prerequisites, which are, respectively:

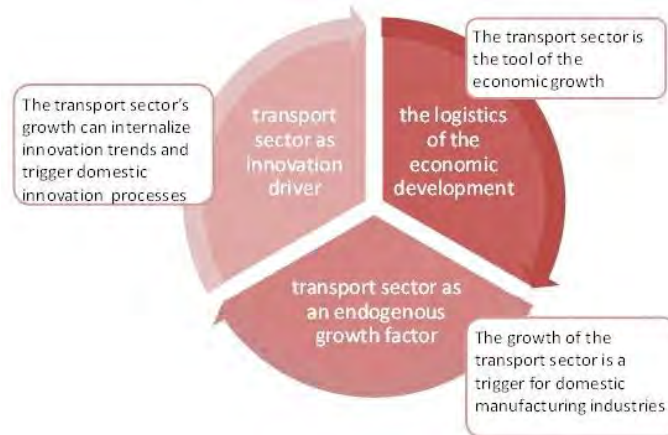
- tangible progress in the degree of connectivity of the country;
- success in the production of green electricity.

This means that many of the innovative paths in the transport systems are mainly placed downstream of other growth processes in the country and are strictly dependent on their success.

The issue discussed so far has linked the growth of the transport sector with the country's economic growth. It has been highlighted that the possible dimensions of this problem are three (see figure below): i) the role of transport as a logistic arm of economic development, ii) the role of internal demand induced by the development of the transport sector as a potential growth factor for national manufacturing industries, iii) the way in which

innovative trends in transport can be internalized and could trigger national innovative clusters.

Figure 15: The three dimensions of the transport sector's growth.



The assessment pointed out that only the first dimension appears to be well focused. In other words, what seems to be missing here is the need to "close the circle". In fact, looking at the figure above, two segments are still missing to complete the circumference: that of the relationship between sectoral development and internal production and that between sectoral development and innovation.

Both of these aspects seem to be still at a very early stage of development but in different ways. The development of a domestic production chain for the transport sector has not so far had a high priority in manufacturing development policies,

despite being a chain with a strong propensity to import. A tendency to trigger and consolidate innovative clusters, on the other hand, needs many upstream factors that the country still seems to lack, despite some interesting efforts in single production chains or frontier sectors such as pharmaceutical or space.

Nevertheless, the opportunity both to enhance the development of domestic industries to serve the internal demand and to trigger innovation processes should be an opportunity to catch, also considering, to a longer term, the potential to improve the Ethiopia's positioning in the African continent.

2.4.4 International transport connections.

Ethiopia needs to have a strong international projection because of its nature (landlocked) and its ambition in the African continent. This ambition has to be framed in a continental landscape which is now mainly characterized by the Agreement on the African Continental Free Trade Area (AfCFTA). This Agreement defines a long-term scenario of progressive integration of the African economies and, in a broader context, of growing social integration. For this reason, the results of the assessment have to be framed within this landscape.

The AfCFTA treaty is not the only broad-spectrum commercial cooperation agreement in Africa but is preceded by similar experiences promoted by groups of African countries, bordering on each other or wishing to facilitate exchanges, which has given rise to regional economic communities (REC). For this reason, the process of economic integration underlying AfCFTA can benefit from the experience and steps already taken, for example, by COMESA, EAC and SADC, using the

skills, knowledge and legislative, procedural and technical tools developed under the aforementioned commercial agreements.

For example, as regards the regional economic communities made up of COMESA, REC and SADC, it is quite evident that the experience and work developed in the preparation and implementation of the TTTFP (Tripartite Transport and Transit Facilitation Program) and in particular of the MCBRTA (Multilateral Cross Border Road Transport Agreement) and the VLMA (Vehicle Load Management Agreement) - will constitute a fundamental starting point for the implementation of AfCFTA in the transport sector.

As described above (see 3.1.1) the expected positive impact of the AfCFTA for Ethiopia is very important. The current absolute prevalence of intra-African trade in the commercial flows of African countries represents a very important basis on which the decrease of trade duties can act in a multiplicative sense, encouraging both the manufacturing and services sectors to set

themselves the goal of serving international markets and not only local or national ones. The same effect is expected from the application of measures to reduce non-tariff barriers. These processes will make arise opportunities for certain economies to develop distributions hubs to optimize on the demand created by the enlarged market.

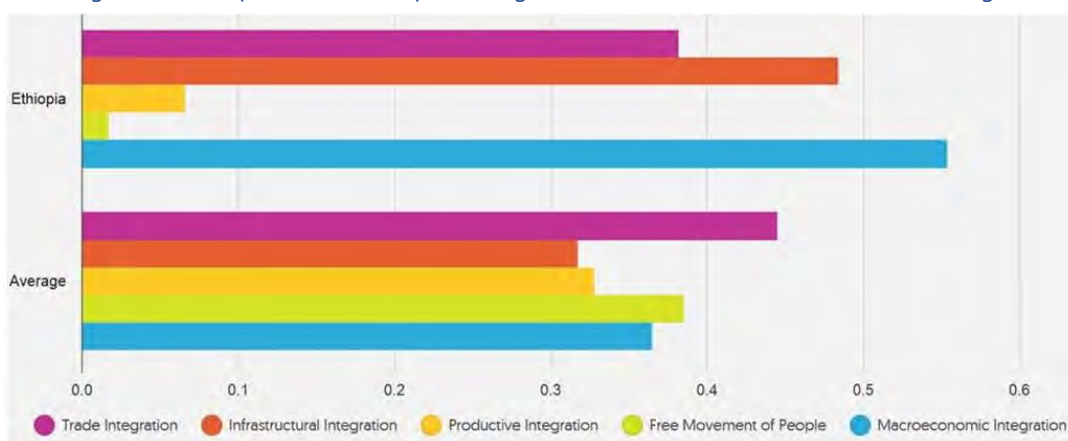
AfCTA is not only supposed to improve trade: by enlarging the dimension of markets and establishing a competitive field for different products and services it will likely catalyse the structural transformation of the countries from commodities and low technology-based economies to economies more centred on manufacturing and diversified knowledge-based. This, in turn, will lead to the increase of value-added manufacturing and to the decrease of trade imbalances with the more developed countries.

Within this scenario, the development of Ethiopia in the next decades describes a favourable trend that is the basis to tackle the further challenge undertaken by the country: to enter in the group of the medium-low-income countries.

To this purpose it is useful to look at the positioning of Ethiopia in the continental trade. According with the AFRICA Regional Integration Index³⁹, the position of Ethiopia within its economic community (COMESA) can be described by the figure below.

³⁹ The Index uses sixteen indicators, grouped into five dimensions, to measure how well each country and region in Africa is integrated with its neighbours. ARII also measures the state of regional integration for the continent as a whole. The ARII team is supported by African Union Commission, the African Development Bank, and the United Nations Economic Commission for Africa (ECA).

Figure 16: Comparison of Ethiopia's integration with the COMESA countries (average)



Source: ARII - <https://www.integrate-africa.org/rankings/countries/ethiopia/>

It is easy to see that the Ethiopian figures with higher values compared with the average of COMESA countries are the economic ones, while the dimension related to the people's movement is far below the average. Ethiopia should then benefit from fast progresses of trade and economic integration, because its starting point is relatively high.

Moving from the general to the sectoral vision, it must be emphasized that transport is one of the five priority sectors selected to start the practical implementation of the Agreement for the Non-Tariff Barriers area. This means that the sector will work as a laboratory to test this harmonization process on a large scale.

To this purpose it has to be said that, for the transport sector, the implementation path can benefit of the previous programs and measures established under the different commercial agreements involving the African RECs. In addition to the TTTF Program it is necessary to mention the Single African Air Transport Market (SAATM), one of the flagship projects of the African Union. This is to say that the African transport sector does not start from scratch in its process of integration and that not only assessment activities but also many measures and actions have been undertaken to achieve the goal.

Given this general landscape it is of full evidence that the issue of the international connections of the country is a crucial topic to be faced and that the planning activity has to focus on this issue taking it as one of the points of view to set the future of the transport sector.

The assessment of the transport sector enlightened three sectoral dimensions of the international transport issue:

- air connections;
- sea connections;
- connections at land borders:

As air connections are concerned, the status of Ethiopia with respect to international treaties of multilateral law, as registered by ICAO, counts 26 acts signed by the country, while as regards the aeronautical agreements/arrangements between the countries their number is 29⁴⁰.

The country has a large number of scheduled international flights and it is leader in Africa for providing passenger services. Thanks to its diversification strategy undertaken years ago, Ethiopian Airlines is now an important operator also for international cargo business and for maintenance services in the Africa continent. The leading role of EAL Group allowed the country to act as an emerging actor in the international aviation environment, building the ground to further development in a competitive scenario.

The long term set up of the African air services is defined by the AfCTA which provides the implementation of the Single African Air Transport Market (SAATM). Accordingly, the Agreement provides for the full liberalisation of intra-African air transport services in terms of market access, the free exercise of first, second, third, fourth and fifth freedom traffic rights for scheduled and freight air services by eligible airlines. The process of implementation of SAATM is based on a specific agreement (Memorandum of Implementation, signed in 2018) which states the prevalence of SAATM's provisions on any bilateral/multilateral

⁴⁰ See ICAO website. Respectively: www.icao.int/secretariat/legal/pages/treatycollection, and Dagmar database at <https://cfapp.icao.int/dagmar/>.

agreement concluded by SAATM's signatory countries.

Although the long-term trend is well and clearly defined, its practical implementation relies on the political will of each signing country. Almost the totality of African countries signed the solemn commitment to the SAATM, 32 have signed the Memorandum of Implementation in 2018 and 18 have implemented the Memorandum at least at 50%, Ethiopia is between 75% and 80%⁴¹. This is a situation of competitive advantage for the country, because Ethiopia developed its air industry as a prime mover in the African continent and can lead the process of progressive opening of the market starting from a strong position. As the sectoral assessment shows, this positioning concerns not only air transport services (both passengers and cargo) but also the maintenance sector which is, at the same time, crucial for aviation safety and of great importance for the industrial content of the activities.

From the point of view of international connections Ethiopia highlights numerous strengths and few weaknesses, at least in the continental field; On the global level, in fact, the competition is always very harsh. However, leadership in Africa and the opportunities offered by the continental market offer a rather solid development base for the future to the country.

The situation of Ethiopia with regard to maritime connections is strongly influenced by the status of landlocked country. The main issues enlightened by the assessment are related with the following factors:

- maritime fleet ownership,
- port diversification policy.

The landlocked condition has not raised the country from the financial commitment linked to the maintenance of its own naval fleet. In fact, the engagement in a sea fleet calls for a big financial effort of the country, which is not fully justified from the economic point of view but has a crucial importance to secure the country's strategic supplies.

As globalization has made shipping a highly competitive industry, with vessels registered in one country, owners from another country, operators from a third country and the elements composing the shipping service (insurance, equipment, seafarers, bunkering, ship repair) likely purchased in different countries, Ethiopia is trying to bear an high level of management

complexities but is not able to do it without losing money.

Furthermore, the evolution of diplomatic relations and the instability in the neighbouring coastal countries has led to a concentration of the country's trade flows on a single logistic corridor, the one between the capital city, Addis Ababa, and the port of Djibouti.

On the other hand, as Ethiopia progress in its economic integration within the international markets and relationships, the country has to review its sea logistics policies based on a self-sufficient approach, to land to a more balanced approach to the sea fleet based on a mix of owned and rented vessels. Reading behind the lines this issue arises as one of the outcomes of the assessment carried out within the National Logistics Strategy and suggests a clever selection of investments on this matter, underlying that own property vessels could be not as important as they were in the past. At the same time this process also needs to review the present commitment of the public operator which is in charge not only of the fleet investments and management but also, on a bigger scale, of the integration of both sea and land dimensions of logistics services. In fact, the clear definition of the scope and of the objectives of the owned fleet, the identification of the subject in charge to manage the assets, the assessment of the ability of ESLSE to act as a shipping company and/or as a NVOOC⁴² are different steps of the same process.

As congestion and underperformance of the Addis Ababa - Djibouti logistics corridor is one of the main weaknesses of the country's economic system it is of full evidence that a diversification of the country's port connections must be one of the focuses of the transport planning activity. In this regard, it must be noted that Ethiopia has already undertaken a path to diversify its port connections: several MoUs and agreements, bilateral or multilateral, have been signed with the aim of developing alternative port connections.

For example, the agreement to develop the LAPSET Corridor between Kenya, Ethiopia and South Sudan is a multimodal program including

⁴¹ African Civil Aviation Commission (AfCAC) website, sept 2021.

⁴² A Non-Vessel Operating Common Carrier (NVOCC) is a company that transports goods under its prices and conditions without operating vessels. It acts exactly like an ocean carrier issuing its own bill of lading, but unlike a shipping company, it does not own any sea-going transportation vessels. A NVOCC leases spaces from other ocean carriers which they then sell to their customers, in many cases it owns and operates containers and, depending on the types of contracts, it is recognized as a virtual "carrier" and in certain cases accepts all liabilities of a carrier.

not only railway and road connections but also investments in ports, airports and pipelines. Within this program is foreseen the connection of Ethiopia with Lamu Port both by highway and standard gauge railway. Continuing to the north, another developing connection is that with the port of Berber (Somaliland) which will be discussed later.

Despite being part of the Djibouti territory and being managed by the same port authority, the Tadjura port can be considered as an alternative to the Djibouti port. The port is connected to Ethiopia via road by a 120 km new road (from Tadjoura to Balho) and allows both to serve better the north of the country and decrease the congestion in the two corridors commonly used via Galafi and Dewele.

As northern area is concerned the connections involved are that with Sudan - where is foreseen a rail link from Addis Ababa to Port Sudan with a feasibility study financed by AfDB - and the link with Eritrea, including the connections with both Massawa and Assab ports. On this route the road link is operational but the capacity of the ports is not so developed as at Djibouti or Lamu.

These latter considerations lead to the second issue linked with port connections that is the port ability to cope with big vessels operations. In this respect almost all the ports potentially interesting for Ethiopia, excluding Djibouti and Lamu, need of important investments to develop docks and terminals and to manage big vessels. The scenario here is that of the competition between big terminal operators like Chinese companies and DP World which compete for ports' concessions along the East Africa's coast.

It is the case of Berbera, where Ethiopia entered into an agreement to be one of the shareholders of the Berbera Port authority, while DP World obtained a 30-year concession to develop the port and also provided funds to finance the road link between the port and the Ethiopian border (Berbera - Togochale link). A suitable connection between the border and Dire Dawa would ensure the link with the main expressway system of the country.

The same issue seems to be on the table with respect to the Eritrean ports, Assab first. In this case, while the road connection is running through the A1 Addis Ababa - Assab, a first part of the railway link is under completion but, on one hand the missing leg (from Hara Gebeya to Assab) is not of a negligible length and, moreover, the port needs to be improved to enhance its capacity.

The crucial point in this discussion is the level of the financial effort to have both a number of ports able to receive modern vessels and a number of land connections with a sufficient carrying capacity. In this respect the model envisaged by the Berbera case seems to be a positive example. In a wider view, a securitized financial effort on the port by a terminal operator, a pool of international donors to finance the land connection or - as an alternative solution - a further financial involvement of an international logistics operator may constitute a way to undertake a path to a multi-port system serving the country.

To summarize, and excluding the aspects related to geopolitics that are outside the transport planning activities, the issue of port diversification highlights some important factors. As regards the means by which diversification can be implemented, there are two main approaches that can be followed: a long-term space lease (i.e. a terminal concession) and a stake in the authority responsible for managing the port. The two paths have different implications: in the first case the main instrument is a terminal operator who acts as a trusted operator of the country while in the second case the share of a port authority is held by a public authority which also bears (directly or indirectly) the related charges.

Also in this case, as for the vessel's topic, the problem is linked to the mission of ESLSE, which, being the state-owned logistic operator of Ethiopia, seems to necessarily have a leading role also in this case.

As mentioned at the beginning of this part, international land links are the other side of port connections. In this regard, the political power has to face a twofold issue: i) to fill a physical gap at border line and, ii) to smooth a technical and/or administrative barrier. In the first case the gap is filled through the development of a physical land link where it does not exist or an improvement is required. In the second case the issue is to improve the exchange of transport services by deleting or limiting the non-physical barriers for land connections, in order to ensure a seamless flow of services.

The first issue belongs to the area of transport connections planning, taking in account their impact on the demand flows, on the cost of services and the financial effort required to realise the investments that fills the gaps. This topic has been tackled for each subsector in the sectoral report and will be summarised in 3.5.

The second issue is linked to the way in which international services are carried out through the

land connections at national borders. On this topic the long-term scenario is sketched by the AfCTA which provides for a progressive opening of international land transport services. As stated above this means to decrease/delete the technical and non-technical barriers at national boundaries for each transport system. In other words, the action needed is that to increase the interoperability of transport systems.

In this regard it is useful to distinguish between road and rail connections because the two different systems are different both from the technical point of view and regarding the status of development.

As road transport is concerned, there are little technical barriers concerning infrastructures while this is an actual issue for vehicles authorisation, driving licenses and insurance rules. In this field the starting point is the adoption of the Multilateral Cross Border Road Transport Agreement (MCBRTA) with the harmonization of the legal framework for cross-border road transport operations in many of the member States of the Tripartite Treaty (COMESA-EAC-SADC). The agreement, setting common requirements for operators, vehicles and drivers to carry out cross border operations, should replace all the bilateral agreements on cross border road transports. This path, which also includes the VLMA (Vehicle Load Management Agreement), will be one of the pillars of the implementation process of AfCTA. In this way it is possible to affirm that the path to a decisive decrease of road barriers has been set on the right track.

The case of railways is different. The technical and organizational complexity of the railway system is a factor which, based on historical

experience, brings with it the possibility of multiple solutions and therefore the existence of unconnected or partially connected systems. Africa makes no exception and has different gauges, power systems, axle loads, coupling systems. On the other hand, Ethiopia started to build his new railway network from scratch, designing more than 6000 km of standard gauge and electrified network. The main international links under construction or forecasted (LAPSSET Corridor, Ethiopia - Sudan connection, Ethiopia - Djibouti, link to Tadjura port, Ethiopia - Eritrea, link to Assab port) are supposed to be technically interoperable at least in terms of gauge and axle loads. As in the road case, the long-term scenario is that stated by the Free Trade Agreement which is not detailed under the technical point of view but provides the fundamental principle of the reduction/deletion of barriers to continental trade. This means that the adoption of little or no interoperable technical specifications for international rail corridors should be discouraged under the AfCTA approach.

As for the administrative/non-technical barriers, the framework of the Agreement is a stimulus for Ethiopia and neighbouring countries to adopt common management models of their railways systems or, with a less binding approach, to agree on common management principles to be implemented, in order to make the national railway regulatory frameworks converge in the long term. In the short-medium term, Ethiopia needs to define its own approach to railways, having undertaken the first part of the network development path and trying to raise the first results of its huge investments. As stated above (3.3.2) the further developments should be evaluated through a clever sectoral and project risk assessment.

3 NATIONAL TRANSPORT STRATEGY AND SECTORAL POLICY NOTES

3.1 INTRODUCTION

The definition of a National Transport Strategy of Ethiopia in the framework of a National Transport Master Plan means to indicate general goals, policies and list measures to be taken. In order to do this, it is necessary to remember that the transport domain (the transport sector) can be considered under two points of view as follows.

Transport as tool to reach some development objectives. This means looking at the purpose of the sector, to ensure mobility, or access first of all to primary services and then to satisfy all other mobility needs. The concept of accessibility is crucial for a sustainable development. It means accessibility to basic services/needs like health, education, markets. This concept of accessibility, in turns, lead to the concept of 'mobility service' and to the underlying conditions of accessibility:

physical connection, legal possibility, technical ability.

Transport as an industry able to create positive/favourable dynamics to reach economic growth, employment level, innovation. This means to embrace the industrial transport sector in its dual aspect of manufacturing and production of services. Therefore, growth and innovation dynamics both concern these aspects, such as designing networks and services, infrastructure machinery, transportation vehicles, mobility services and all mobility-related services.

Both the above points of view must be considered if the problem of drawing the future of the sector in the long term is addressed, above all taking into account the country's general development drivers.

3.2 OUTLINE OF THE ETHIOPIAN TRANSPORT STRATEGY

The assessment of the institutional side of the transport sector has shown that the intervention model adopted so far by national governments has been based on a dominant role of the state in all its various institutions or bodies (Federal Government/Regional State Government, Authorities, State Owned Enterprises).

Now, after having achieved remarkable results, this model is no longer suitable for continuing on the path of economic and social growth. In fact: 1) the public budget cannot bear the weight of all the necessary investments and 2) the public sector is not fully capable of guaranteeing the levels of service resulting from the social progress achieved. Even more, it will not be able to guarantee further improvements in the levels of accessibility that are planned for the future population of the country.

The consequences of this diagnosis have pushed the government to focus its plans on: i) the need to give more role to the private sector and ii) increase the administrative and management capacities of the whole public sector. The Home-Grown Economic Reform is the answer of the country to the question about how to go ahead with the growth path of the past decades and it

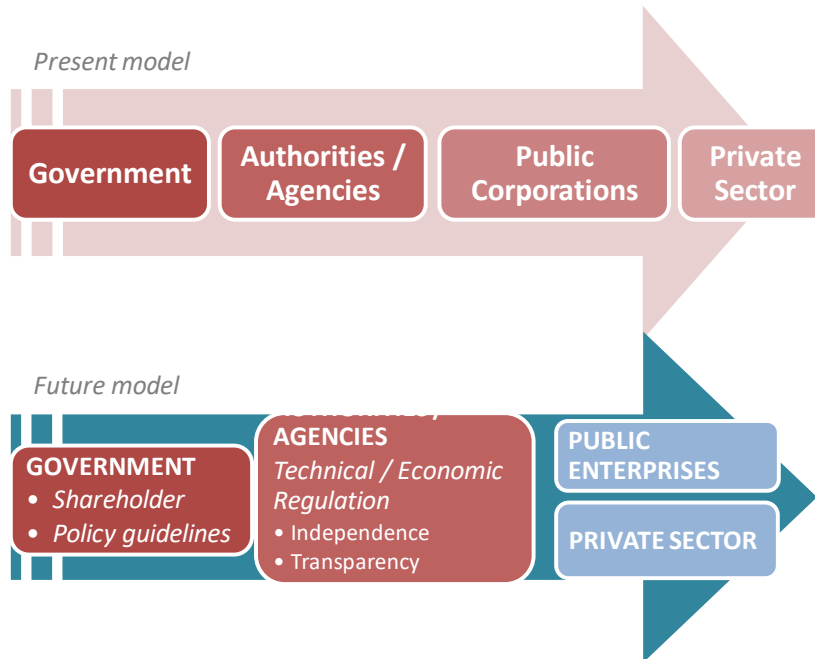
marks a discontinuity with respect to the public intervention model adopted up to now. The new Government's Agenda design a stronger role of the private sector and calls for different tools from the simple direct action of public enterprises, which led the public action in the long growth period of the country during the last decades. In fact, "the main aim and focus of the HGER is the enhancement of productivity and competitiveness of the overall economy, and a gradual transition from public to private sector-led growth⁴³. The participation of private operators is essential not only to support the public resources that will be necessary to finance the country's investment efforts but also to improve the entrepreneurial and managerial culture.

This scenario is assumed as one of the main drivers of the Ethiopia's future economic environment; its deployment in the transport sector will have very important consequences for all the sectors' stakeholders. Following the scenario, the intervention model on the transport

⁴³ FDRE, Planning and Development Commission, Ten years development plan. A pathway to prosperity (2021-2030), pag 8.

sector will change as described in the figure presented below.

Figure 17: The present and the future model of intervention in the transport sector.



Within the current model, each of the actors in the supply chain has its role, but the public actors have not only administrative and regulatory, but also operational and managerial tasks, due to the development phase in which Ethiopia is still in large part, especially at local level. This public-led model is a classic instrument of economic development in which public action simultaneously lays the foundation and takes the place of private initiative, pending that the latter can gradually develop and replace public finances (and, in part, some public institutions) in the country's growth process.

Due to the remarkable success in its development path, Ethiopia is experiencing a transition period from underdeveloped to low-middle-income country. Within this process, the role of the public sector as a whole is changing (and, above all, it will change in the near future) due to the different requests coming from economic operators, national and international, and from the community of citizens. At transport system level this means that institutions, technical/regulation agencies, public corporations will be requested to act in different fields and/or in different ways. The figure of the future model sketches an evolution of the previous model that are marked by two main factors: i) public and private companies are at the same level, ii) the intervention chain of public powers is mainly based on the binomial Ministry → Authority, leaving to the public enterprises the

challenge of carrying out their specific mission of service providing in a competitive environment.

The new Government's Agenda design a stronger role of the private sector and calls for different tools from the simple direct action of public enterprises, which led the public action in the long growth period of the country during the last decades. The participation of private operators is essential due to the lack of public resources which are foreseen to be set below the level needed to cover the country's investment efforts because of budget constraints.

In a sector which has a residual role of the private sector, or at most limited to ancillary or medium-small sized activities, the entry of private investors on large-scale projects (air, rail or logistics sector) can follow two paths: the sale of the public monopolistic company or the dismantling of the monopoly itself through the opening of the market. In fact, it is difficult to imagine, that a private operator decides to make important financial effort without controlling (at least partially) the business activity.

To say it in other words, any project that envisages the significant entry of private operators, especially foreign ones, in the sectors covered by public enterprises, alternatively passes through a privatization (of the company) or the liberalization of the concerned sector. It is the case of aviation, railways and logistics. At the moment it does not seem that, in this respect, the Government has adopted a clear position,

though some progresses in logistics sector could suggest that the path is open towards a positive evolution.

This issue is really crucial for the future developments of the country because any step towards market solutions means to give up the traditional instrument of direct control of the economic environment which is a powerful (but sometimes poisoned) way to lead the country. On the other hand, giving to private forces the freedom to invest and undertake would enhance the country's ability to growth and, by adopting the suitable regulatory framework (more complex than the direct intervention), would boost the development of Ethiopia towards the desired targets.

Furthermore, the governance of the transport sector will have to take into account this increased role of the private sector. And it will have to do so with a rather varied situation in which, despite the clear success in the sector's growth and in the correspondent development of the institutions in charge to manage it, there are still many gaps to be filled, especially at the local level.

The first issue to be faced is that of the ability of the institutions to carry out properly all the tasks assigned. This is particularly evident at local level in which the setting of the local authorities, the tasks assigned and the skills of the apical personnel show relevant gaps. This is particularly the case of the road sector which has many local public authorities, being the most important part of the transport activities of the country. At national level gaps and deficiencies exists which are more concentrated in maritime and logistics, and railway sectors. Here, besides the need to reinforce the number and the skills of the authorities' personnel, the unbalances between the authorities and the public enterprises are important. For railways the specialised directorate within the MoTL is at an early operational stage, while the sectoral authority is in the way to be established. In the Logistics and Maritime sector, which is of paramount importance for the country, the authority did not succeed in introducing a higher degree of efficiency in the sector, also because of a non-collaborative behaviour of the public enterprise.

At the apical point of the transport institutions, the MoTL suffers of lack of personnel and gaps in skilled professionals' figures and need to undertake a program of strengthening of its workforce, both at quantitative and qualitative level. A general process of reinforcement of knowledge and skills of the public employees it is

certainly one of the main actions to be undertaken to make the transport sector's institution able to tackle the challenges in the medium and long-term perspective.

Among these challenges, as stated above, the creation of a favourable environment for private operators in investing and managing transport activities seems to be the main issue. On this topic the different speed of the country's development, at national and local level, calls for a twofold strategy in the capacity building strategy. On one side to operate to build and consolidate the basic skills at local level, focusing interventions on Regional States' authorities (both RRAs and Regional Transport Bureaus). On the other side to both reinforce the ability of the weaker institutions at national level and to prepare a new set of skills suitable to cope with the issues arising from the privatisation/liberalisation dynamics. The latter require the ability to manage the tools of economic regulation of activities at a higher level than what has been practiced in the country so far, to ensure coexistence between public and private operators and the country's attractiveness for investment.

The country's economic and social progress requires the transport sector to perform a more qualified public function focused on creating the conditions for a growth in services, leaving room for the development of market activities to satisfy demand and only intervening directly if the market fails.

In addition to the more directly institutional aspects, another outcome, perhaps the most important of the analysis carried out by the Consultant, concerns the future growth of transport demand in the coming decades. This level of growth will need transport capacity, i.e., infrastructure and services, to be met effectively. As already underlined, the burden of satisfying this growing demand must be progressively shifted to the private sector, defining the conditions and rules for the functioning of economic initiatives to ensure that they are also directed towards purposes of public interest.

The country's full adherence to the SDG principles leads Ethiopia towards the internalization of the concept of sustainability in the transport sector. This approach needs particular attention not only to the transport system as a means of improving the quality of life and social development of the country but also to transport as an industrial sector which also has negative repercussions on lives and health of citizens. For this reason, the safety issue became crucial to measure how the

transport sector is able to meet quantity and quality levels of transport demand in a sustainable way.

Attention to the impact of transport and the size of future mobility demand flows represent challenges for the future development of the country, which can represent concrete opportunities if the country will be able to address the development of the internal market towards sustainable technological and organizational solutions. Taking advantage of the intense development dynamics of the sector to apply and develop innovative solutions is also a way to position the country for the future development of the continental market, making Ethiopia a hub of innovative and sustainable solutions for Africa.

Also considering the extension of the reference period required for the Transport Master Plan (30 years), the evolutionary framework of the African continent plays an important role. This role of the international issue requires the development of an adequate sectoral strategy that allows the Ethiopian transport system to seize the great development opportunities that will arise through the African Free Trade Agreement.

On the basis of the considerations made above, the strategic goals of the transport sector can be outlined as follows.

- a) Provide a higher level of services, both in quantity and quality terms ensuring the sustainability of the sector.
- b) Adopt a model of public intervention in the sector consistent with the Home Grown Economic Reform.
- c) Improve technical and managerial capabilities of the sector, both for institutions and private companies.
- d) Exploit the industrial side of the sector by capturing the development opportunities of the internal mobility market.
- e) Prepare the sector for the implementation of the Free Trade Agreement.

These strategic goals are consistent with the planning framework established by the Ten Years Development Plan 2020-2030 and with the Home-Grown Economic Reform. On the other hand, while some of the objectives have a clear relationship with the decision-making levers of the current Federal Government structure, some others require coordination between different ministries and public bodies.

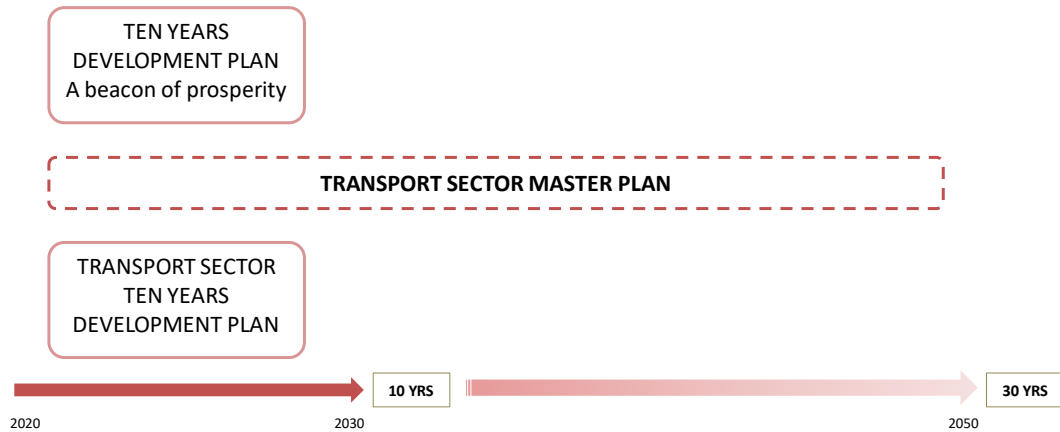
This is the case, for example, of the strategic goal concerning the industrial development of the transport sector (letter d), above), in which the collaboration between the MoTL, the Ministry of Industry and the Ministry of Innovation and Technology is crucial. Specific objectives, policies and implementing measures do not fall under the responsibility of a single ministry, in this case they are rather outside the competence of the MoTL. However, the opportunities given by the transport sector to the country's industrial and technological growth cannot be ignored and, even more, the sector's dependence on imported goods should be reduced to limit investment costs and currency constraints.

A similar consideration applies to the change of public intervention in the sector (letter b). In this case, the current structure of the federal government assigns the supervision of public enterprises to PEHA and it is therefore evident the importance of a joint action between the latter and MoTL in discussing and sharing guidelines and objectives to transport SOEs.

In general, therefore, the strategic objectives of the transport sector may have a scope that goes beyond the direct responsibilities of the MoTL but this, as has often been highlighted in the evaluation, is due to the weight that horizontal factors have in the functioning of the sector itself.

It has also to be noted that the above goals are projected on a longer period, as illustrated in the figure below.

Figure 18: General and Transport planning framework. The role of Transport Master Plan



In fact, the references and external factors of the scenario that have been taken as reference (see Chapter 2) are the SDGs and the Africa 2063 Agenda. Both these international references represent a long-term horizon within which the transformation of the country, and therefore of the transport sector, must be located. Given the length of the period we have been asked to consider, the sectoral strategic objectives appear ambitious but within the reach of the country.

In the next subchapters the achievement of strategic objectives is broken down by into sectoral policy notes and time sub-periods, similarly to what is provided in the case of investments in part 3.5 below. Therefore, policies and implementation measures that each sub-sector will have to adopt will follow, as far as reasonably possible, a similar time frame. The set of sectoral and sub-sectoral strategic goals, as well as the policy measures advised for each sub-sector, should feed the revision process of the National Transport Policy issued in 2020.

3.3 SECTORAL POLICY NOTES

3.3.1 Roads

The road sub-sector is the backbone of the national transport sector and still will be the backbone of the system over the next decades. The strategic goals defined at sectoral level can be organized for this sub-sector as follows.

- a) Develop the road network, the vehicles fleet and increase the domestic capabilities of the sub-sector.
- b) Prepare the opening of the market through an accurate selection of private initiatives.
- c) Provide a suitable level of transport services produced by public or private operators.
- d) Improve the sustainability of the road sector and minimize the impact of road mobility (collective and private vehicles).
- e) Enhance the ability and the skills of institutions' officials and employees.

Develop the road network, the vehicles fleet and increase the domestic capabilities of the sub-sector.

The development of the road network and its adaptation to the demand for mobility is the recurring objective of the road system which must be based on demand forecasts and transport models that allow an accurate investment planning aiming at: i) avoid relevant bottlenecks on the transport networks and, ii) to enable an efficient provision of transport services for the country. The sub-sector reports (respectively, Sector Report 2A – Road network and 2B – Rural roads) deal in detail with these aspects which are then brought back to a unitary vision of the whole transport sector in the final section 3.8 of this report.

As the providing of road services is not reserved to public companies but subject to public authorization, it would seem that the supply of road vehicles should not be a public goal. On the other hand, the availability of a certain level of transport services should go hand in hand with the progress of the country, for this reason and considering the level of investments required in this field, it is necessary that the public

authorities are focused on this issue. Sub sectoral reports dealing with this topic (2A – Road network, 2B – Rural roads and 7 Urban and Public transport) show the huge increase forecasted in mobility flows, also evaluating the magnitude of vehicles required to serve it. The responsibility to meet with the increasing need of road vehicles is shared both by public and private transport operators. From the public side this calls not only an effort in terms of budget but also a specific action aimed at lowering the investments' cost by developing the domestic providing of mass transport road vehicles.

In order to develop the road transport capacity (i.e. infrastructure and mass transport vehicles) a general improvement of the sub-sectoral capabilities is requested. This means intervening on the main critical aspects that have been detected in sub-sectoral assessment arising both at public and private level.

As suggested in Report 2B - Rural roads, the improvement of the structure and organization of RRAs is a main target to reach. A revision and re-definition of RRAs duties is fundamental to multiply and disseminate the progress achieved by ERA nationally and, at the same time, to design and implement a process of exchange and dissemination of the best experiences. Since it is necessary to take into account the peculiarities of local realities and each regional state, the organizational solutions to be adopted must be inspired by common principles without creating identical structures in every regional state.

Road design, construction and maintenance capacities have to be enhanced first by adopting and implementing the RAM (Road Asset Management) approach at RRAs level. This is a first crucial step to be undertaken in order to progress and implement a path of progressive innovation implementation in the sub-sector. Further steps will be based on the progressive adoption of technical innovations presently introduced in this field, like the use of Building Information Modelling (BIM) and the Internet of Things (IoT) approach. The path sketched above needs a parallel program of enhancement of the human resources acting in the sub-sector, to be undertaken both at TVET and academic level.

Provide a suitable level of transport services produced by public or private operators.

As mentioned above, creating the conditions for an adequate offering of public transport services is a primary public objective of the road sub sector. Given that the private ability to self-production of mobility is, and will be for a long

time, still limited by economic constraints for the main part of the population, a public intervention in this field is obviously recommended. The expression "public intervention" does not mean public intervention on an exclusive basis, but the use of both forms of service supply, public and private, depending on the circumstances. The core issue is represented by the objective of improving the participation of private operators in passenger service providing and improve the supply of services offered by public companies in order to meet the future demand needs.

To this purpose the sub-sectoral objective is to ensure a minimum level of public transport services and to transform this goal into Regional State's and local's targets (in quantity and quality) according with the operating conditions and the forecasted level of mobility. In doing this, the whole public sector must be involved in creating the conditions to reach the above-mentioned targets, both by private and public supply.

Particular attention must be made here for the regulatory framework, which is currently unable to cope with the objective. What is requested here by the Public Administration is to move from an administrative vision (authorize operators to offer services) to a planning, taking charge of identifying a level of services consistent with the development of the country and intervening in the event that the Market is not able to achieve the goals, both in quantity and for quality of services.

At federal level guidelines of public intervention have to be established, introducing the principles of: i) public services planning, consistent with the population needs and expected mobility flows; ii) public service obligations, to cope with the situation of absence/scarcity of private supply (market failures). In this case the principle of competitive bidding is suggested, in order to minimise public budget expenses. Many tools can be adopted to implement the aforementioned principles, from public service contracts to tariff compensation schemes.

The recent repeal of FTA puts the task of issuing the aforementioned guidelines into the MoTL. However, the definition of specific objectives directly involves regional states and major municipalities. This requires close collaboration between the federal and regional level, through the coordination of the Transport Bureaus with regional governments and municipalities. Furthermore, as suggested in Report 7 - Urban and Public Transport, an important part of the future transport demand will take place along the

mobility corridors and many of them involve more regional states, connecting two or more, large urban centres. In these cases, the management of a sole regional or sole municipal authority is not suitable for the purpose and the creation of special agencies that can plan and coordinate public functions at corridor level appears necessary. The implementation path of this complex process can benefit of the recently approved Regulation on the System of Inter-Governmental Relations.

Prepare the opening of the market through an accurate selection of private initiatives.

The sub-sector already shows a presence of private operators, their growth contribution takes shape differently depending on whether it is infrastructure or services. In the latter field the offer is already largely provided by the action of private subjects, especially in freight transport but also for passenger services.

The previous point has clarified that the additional contribution in the field of passenger services can develop from a more advanced regulatory approach to the offer of services, able to create the conditions for an increase in both the supply of services and their quality.

With regard to investments, an accurate selection of projects appears based on their level of risk, complexity and financial effort. For medium or small projects, domestic investors can be solicited. Local communities can also be involved with projects specifically aimed at improving rural connections. In general, the development of sub-sectoral criteria for risk analysis seems to be important, in order to prevent a different assessment between investment projects characterized by large amounts and long durations.

Improve the sustainability of the road sector and minimize the impact of road mobility.

In 2.1.1 the implication of SDGs for the transport sector have been discussed and in the beginning of this part the distinction between transport as a tool and transport as an industry has been introduced. Given the role of road sub-sector its impact on the quality of life of the population has to be carefully considered, both for its positive and negative implications.

In general, as road mobility increases, there is a parallel increase in accidents and loss of life and Ethiopia has not escaped this trend. In this field, the sub-sector objective must be to continue the path taken through the Road safety policy, which has identified a series of pillars: infrastructure

quality, quality of the vehicle fleet (age, maintenance), drivers' behaviour. The quality of infrastructures and vehicles appears critical because it involves two crucial and consecutive phases at the same time: design and maintenance, with the second being often neglected or carried out by unskilled personnel. Furthermore, sustainable infrastructure design requires a careful approach to the impact on the surrounding environment, the use of scarce resources and, of course, the populations involved in civil works. While progress has been made on the first point, the second requires a profound cultural change which means the transition from a reactive maintenance approach to a preventive one, as has already been mentioned with reference to the adoption of RAM approach.

Furthermore, a homogeneous application throughout the national territory of the rules in force on road safety appears necessary. In this field the introduction of technological innovation like ICT systems can largely harmonise the capabilities of the local authorities to apply the rules in force but the collaboration between federal and regional level is very important. To this purpose, as in the case of the corridor agencies, the new Regulation on the System of Inter-Governmental Relations can be the framework within which this collaboration may give effective results.

Besides motorised mobility also the non-motorised mobility is fully included in the enhancing of the sustainability of the road sub-sector. The increase of motorised vehicles makes all the non-motorised mobility highly exposed to potential risks of accidents and this is exactly what is revealed by the statistics of accidents. The Non-Motorised Strategy adopted by the Government in 2020 aims at limiting the risky and unprotected interactions between the two kind of mobility and, in a wider sense, at protecting the weaker part of population. Besides, the NMT is a way to incentivise the adoption of sustainable cities models. Finally, this kind of approach brings mobility planning closer to people's needs, allowing planners and political willingness to become familiar with the principles underlying Sustainable Urban Mobility Plans (SUMP).

Enhance the ability and the skills of institutions' officials and employees.

The change in the model of public intervention, with a greater role attributed to the private sector, requires a great effort to adapt public employees from many points of view. This aspect is dealt with in detail in the following point 3.4.

However, here it is necessary to specify that the effort to be made in the road sub-sector is of particular intensity since this sub-sector involves both federal and regional/local authorities and the latter are crucial for achieving the objectives of the sub-sector itself. In fact, the passage from an administrative vision to a planning one, that has been mentioned above, is not achieved only by adopting general principles and similar organizational models, but necessarily requires qualified personnel, capable of carrying out this new mission.

On the other hand, capacity building programs cannot be the same in the centre and in the

periphery, given that there is a considerable gap in professional qualification. Consequently, the approach must be differentiated to allow, on the one hand, to bridge the gap in professional skills and, on the other, to adapt the necessary knowledge to the new role of the public sector. Skills in planning and economic regulation of services are absolutely necessary and must flank the equally necessary skills of an engineering nature that are the traditional training qualification of managerial staff in the field of transport.

In the following table the main objectives and related policy measures are summarised.

Table 16: Strategic goals and policy measures in the road sub-sector

GOAL	Objective	Measure
a	Promote the communities' capabilities to manage and maintain local infrastructure	Provide the extension of the purchasing machineries programs adopted in some Regional States to all remaining RS
b	Develop a subsectoral risk analysis to have homogenous risk mapping and allocation criteria for road investments	Define criteria for risk mapping in road sub-sector Amend the PPP Directive
b	Support domestic vehicles manufacturing	Introduce shares of domestic production in procurement of mass vehicles
b	Develop policies to incentivize private investments in service providing	Introduce Tax exemptions for mass vehicles involved in public service providing.
c	Provide public budget to Regional States to finance PSO. Introduce an allocation constraint for the budget transferred	Amend the Federal budget procedure
c	Define criteria to ensure a minimum level of service providing in the country Introduce the concept of Public Service Obligation	Define PSO for both public and private operators. Define PSC for service providing. Define minimum tariff schemes
c	Introduce competitive procedures to assign PSO in order to minimise the financial disbursements	Prepare a procurement procedure for PSO
d	Sustainable Road sub-sector improvement	Establish EIA process for new infrastructures Implement sustainable infrastructure design Incentivize low impact road vehicles
d	Road Safety Policy and Non-Motorized Transport Strategy	Carry on the implementation of RS policy and NM Strategy
e	Define the mission and common organizational principles for RRAs	Implement the proposal of RSD Program concerning the Institutional Organizational Setup and Structure of RRAs
e	Define the mission and common organizational principles for Regional Transport Bureaus	Assess the status of Regional Transport Bureaus Draft common organizational principles for RTBs, consistent with RRAs
e	Coordinate and enhance the CB program in road sub sector	Undertake a census of CB programs. Design a measurement system allowing the evaluation of the results. Draft a procedure to coordinate and prioritize the CB programs

3.3.2 Railways

Railways is a complex sector and is essentially at its debut in Ethiopia, since a clear discontinuity with previous experiences has been decided. Given the similarities with the aviation sector, it is extremely important to learn from the lessons that can be drawn from its development. In particular, the time factor is of fundamental importance: time must be given to the railway system to develop its basic requirements and to consolidate the experience of the first years of operation. The governance of the sector must orientate itself towards HGER along an adequate timeline, clarifying the missions of railway companies, their future role and strengthening their capabilities.

The strategic goals defined at sectoral level can be customised for this sub-sector as follows.

- a) Strengthen the start-up of the sub-sector.
- b) Review the governance of the sector and improve the regulatory framework.
- c) Prepare the opening of the market towards a stepwise railway privatization.
- d) Define the standards of the system to guarantee internal and international interoperability.
- e) Build and develop a system of fundamental skills to grow railway professionalism.

Strengthen the start-up of the sub-sector.

The strengthening of Ethiopian railways means, essentially, increase the level of services, improving productivity and opening up the line under construction. Railways are the perfect example of the concept expressed in the HGER about the fact that large part of public investments do not generate the expected income. In a complex system like the railway system the chances of success of turn-key projects made in an unprepared environment are rare. Ethiopia is no exception and even the history of air transport success in the country needed a long period of incubation. The progresses of traffic volumes show that there is an important potential of growth which has to be still exploited on the main rail link and a further potential on the line which is under completion.

At the same time the system suffers of many gaps, of technical, financial and legal kind, which hamper a path of fast growth. In fact, Ethiopia does not seem to have undertaken a very different path from that of other African countries, as described in 2.2.4. Beyond issues related to regulations and governance, current

financial constraints have postponed the normal term of the management contract with the Chinese contractor, slowing down activities and reducing the forecasted revenues.

The sectoral Report 3 - Railway describes the sub-sectoral investments and the related priority rank, showing that the upgrading of the existing (and operating) connection (AA - Djibouti) is at the top of the list. Such an upgrading is fully justified by the magnitude of potential traffic induced by the upgrading that is able to enhance the capacity of the connection along the main logistic corridor of the country. Regardless of the type of governance chosen, this result suggests a development approach over a rather extended time frame, able to gradually consolidate the progress and capabilities of the system.

The present situation suggests that the first sub-sectoral objective should be to reduce obstacles in order to improve investment productivity and prepare the subsector to further developments, avoiding to enter immediately into further huge projects without having fixed the pillars of the system.

Review the governance of the sector and improve the regulatory framework.

The assessment of the sub-sector has pointed out the crucial role of the governance and regulatory issues. Many questions need to be set up, clarified and solved, for example: i) if and when establish the railway authority and which kind of scope assign to it (limited to safety or including also economic regulation). Besides, other regulatory topics calls for a solution like that of construction and operating standards, domestic and international interoperability, safety requirements; ii) which kind of model to be adopted for the railway business, iii) how to review the present governance (ownership, mission) of the three operating entities (ERC, EDR, AALRT).

As question i) is concerned, it is easy to affirm that a rail authority is a necessary requirement to ensure a stable development of the sub-sector. This solution has the advantage to introduce separate aims between the management of the public ownership and the regulation of the system. Furthermore, it makes possible a focused process of technical learning and knowledge development which is more difficult to undertake in a political structure like a Ministry. The ideal solution, probably to be implemented in the long term, should be to grant a degree of independence to the authority because this

status would make the private investments' more attractive. In fact, interests' conflicts between public ownership management and legal regulation of the sub-sector may arise, hampering the private's contribution to the sub-sectoral development. As economic regulation is concerned, the topic is connected with the degree of liberalization of the rail market: the more the openness, the more an independent economic regulation is requested, because this decreases the sub-sectoral risk perception and improve the transparency of business environment.

The following points ii) and iii) are strictly linked. As pointed out before, the experience of African rail concessions stressed the scarce capability of the regulatory frameworks in force to cope with the needs of revitalise/improve the rail systems. Furthermore, lack of rationality in the governance structures undermined the ability to reach physical or financial targets.

The structure of the railway sub-sector in Ethiopia needs to be reformed in order to be able to capitalize on the investments already made and to attract new development initiatives effectively. To this purpose, first of all, a simplification of the entities involved must be made, by excluding AALRT and CDE in from the main picture. In fact: i) AALRT has to be considered as a transport tool at urban/sub urban level (its true mission), and transferred to the Addis Ababa municipality and, ii) CDE has to be treated separately too, and not as transport entity, trying to capture value from the assets (land, buildings), undertaking the due negotiations with the partner.

The mission of ERC should be focused on the development of the Ethiopian National Railway Network, that is the design and building of the lines, ensuring the domestic and international interoperability of the Ethiopian railway system. Given the learning process undertaken operating the Addis Ababa- Djibouti line, EDR should be in charge of the operational part of the railway system through its business units dedicated to infrastructure management and service operation.

At the first glance the bi-national nature of the present rail operator, EDR, might represent a complex issue to be managed but this issue can be overcome through the introduction of suitable contractual forms for the management of the future rail lines to be opened to service. Contractual solutions for the management of services in the railway sector are a consolidated tool at international level. They can be

differentiated by type of service offered (infrastructure management and transport service management) and provide for a participation in commercial risk (net cost contracts) or assign it to a single contracting party (gross cost contracts).

The international benchmark that can be referred to is that adopted until 2015 by French railways, where a SoE (Reseau Ferre de France, RFF) was in charge of network development and management, providing this latter activity through a contractual agreement with SNCF (Societe Nationale de Chemin de Fer), the former railway monopolist⁴⁴. The choose of this approach should give an appropriate ground to the development path of the national railway system, both strengthening technical and managerial capabilities and, at the same time, allowing to introduce private initiatives in the sub-sector. In a later period, this structure can be changed or adapted, depending on the evolution of rail business and privates' willingness to further invest.

Prepare the opening of the market towards a stepwise railway privatization.

Besides the governance issue, the participation of private companies to the financing and managing of railway business is the complementary issue to be faced. Although it is an essential pillar of HGER, private participation in economic activity must be declined according to sectoral conditions. In this sub-sector, the economic conditions for a sudden and strong commitment of private investors have not yet been fulfilled, as section 3.5 demonstrates. This outcome involves two consequences. First that the concept of stepwise privatization can be realized through a gradual market opening. Secondly, that in the short term the realization of large railway projects through private resources is not sufficiently attractive compared to alternative investments.

There are possible areas of intervention by private operators/investors other than those of the construction of long rail routes that could be explored in the short term, for example: i) Short link projects; ii) Rolling stock leasing; iii)

⁴⁴ In 2015 French Government decided to switch to one of the preferred railway management model adopted in the European Union (Italy, Germany, etc) with a state owned holding company, controlling both an Infrastructure Manager and a Rail operator. In order to cope with the liberalised environment in force within the EU this model requires an independent (from the Government) Rail Authority and an accurate regulation of network capacity allocation and infrastructure charges.

Simple traction services; iv) Logistics facilities management; v) Non-core asset divestment. Before entering a brief description of the above opportunities, it is good to emphasize that they also relate to the sub-sector of logistics. It is of great importance that this link between railway mode and logistics is considered carefully, since, due to the country's development path, the opportunities for development offered by these activities have so far been completely neglected (see the Logistics part below).

Short link projects. A private operator/investor builds a rail connection to the existing rail line to connect plants, mines or logistics facilities.

Rolling stock leasing. A private operator/investor rents wagons to the train operator and, if requested, provide maintenance services.

Simple traction services. A rail client (manufacturer, logistics operator, port authority) load rail wagons and pays the rail operator for the traction to the destination point (including infrastructure fees).

Logistics facilities management. A private investor/operator provide logistics services ancillary to rail transportation, in old or new dry ports. The activity can include not only management but also construction or upgrading of logistics sites.

Non-core asset divestment. The CDE case could be solved by managing the sale of public activities by state owners. Being a company that is no longer operational, at least in Ethiopia, the approach should focus on a joint process of asset assessment between the partners and a research of investors interested in purchase.

Benefits deriving from the opportunities listed above can be described as follows: i) reduced amount of the investment, ii) shorter period of cost recovering; iii) synergies with existing businesses. As pointed out there are cross-benefits between rail and logistics which can be explored, because not only railway can play the role of main transport leg of a point-to-point connections, but also investments in rail links to production/logistics sites can transform general opportunities in real traffic volumes and revenues.

In a later period, when governance and regulatory framework will be stabilized, the perceived level of risk of the railway sub-sector should decrease, also thanks to the likely growth of the activities of the existing operator. At that time, further development of the network could take place also with the contribution of private investors.

Define the standards of the railway system to guarantee domestic and international interoperability.

The railway system becomes effective if it can deploy its network effect. The concept of interoperability between railway systems aims to ensure safe railway operations between non-identical lines from a constructive or performance point of view. It is also necessary to add that interoperability is not an absolute concept but that there are minor or greater differences between railway lines that can be filled at increasing costs. From this point of view it is possible to say that the primary requirements are gauges and maximum axle weight; even signalling and power sub system are important but not an insurmountable barrier. It is necessary to discuss this issue considering both the domestic and the international domain.

Despite the short time spent from the definition of the Ethiopian Railway Network, the Ethiopian case has two railway lines made with partially different criteria. Report 3 - Railways deal with this issue, describing the differences between the features of the Addis Ababa - Djibouti line and that of the Awash - Kombolcha line in term of signalization system; the report provides also possible solutions to overcome this gap. Thus, in the domestic field there is an absence of railway construction standards, so that any investment proposal cannot find specific reference requirements and, moreover, can propose constructive options that can generate obstacles and constraints (more or less serious) to operational phases.

The definition of railway construction standards is ongoing at MoTL. It is possible to choose different paths that, in turn, also involve different efforts and durations to be carried out. A possible option is to define the official railway construction standards, referring to the most important international benchmarks, or it is possible to leave the competent authority to assess whether a project is consistent with the Ethiopian Railway Network. Regardless of the solutions adopted what cannot be avoided is a careful assessment of the construction standards in order to ensure the interoperability of the existing railway network, whether they are officially fixed, whether they are evaluated from time to time.

Regarding the international field, the Report 3 - Railways already described the state of the art of railway standards in the African continent. As AfCTA and Agenda 2063 for Africa indicate, the aim to have a continental railway network is a

long-term target. On the other hand, the target of decreasing non-trade barriers in the transport sector is something to be implemented in the next years. This issue is linked not only to technical or constructive barriers but also to administrative and operational ones. From this point of view the EDR experience in operations at borders, jointly with the Ethio-Djiboutian collaboration on the administrative matters on the railway corridor, could be taken as a reference to draft experimental procedures.

As construction standards are concerned, the Ethiopian Railway Network is supposed to be compliant with primary requirements, while the other sub-systems requirements have still to be set at continental level. For this reason, ensuring interoperability has to be a reference for the country in the decision processes of the international projects.

Build and develop a system of fundamental skills to grow railway professionalism.

Since modern railways are a new sub-sector for the country, the related capabilities, both of institutions and public enterprises, started to grow from scratch. The importance of this finding cannot be underestimated when the performances of railways are evaluated.

Management contracts signed with foreign (Chinese) contractors provided, and still provides, the major source of railway knowledge for domestic workforce and management. But, despite the success of such a contractual tool in providing the essential skills for infrastructure management and services' operation, the process of building a corpus of structured knowledge is at an early stage and needs to be enlarged and enhanced.

It is important to learn the lesson coming from a similar sector like aviation, which takes a long time for build a successful case in developing

services, aviation company, regulatory institutions. The progress of the Ethiopian Civil Aviation took decades and the same will be for the Ethiopian railway system.

To undertake the path to develop a railway knowledge in the country needs to enhance all the factors of the learning process and experiences capitalization. The academic system, first of all the engineering discipline, has to promote and improve specialised training courses, enhancing the connections with excellence centres outside Africa. The connection with the railways operational companies (ERC, EDR) have to be enhanced in order to coordinate the placement process according with the needs of the sub-sector development. Not only engineering but also economic, management and environmental disciplines have to be involved with specific focus on railways management and sustainability, in order to be able to capture the benefits of this way of transportation. Besides academic level also TVET programs has to be developed because the complexity of the railway system calls for skilled professionals not only at the top but also in the middle of the workforce pyramid.

Also, on the companies' side efforts have to be focused on the enhancement of the workforce qualification and on the managerial professionalism. The development of the long-awaited railway academy must be boosted and supported by similar training entities in Europe and Asia. Moreover, the association of railway companies should to the international sectoral community (UIC) has to be enlarged to ERC in order to improve its technical and managerial capabilities.

In the following table the main objectives and related policy measures are summarised.

Table 17: Strategic goals and policy measures in the railway sub-sector

GOAL	Objective	Measure
a	Increase the level of services	Remove the financial and organizational obstacles
a	Improve the railways' productivity	
a	Open the line under construction	
b	Review the governance of the sector	Choose the business model for railway sub-sector Review ERC and EDR's mission Allocate AALRT unit under AA Municipality
b	Improve the regulatory framework	Establish the Rail Authority Assign responsibility for railway economic regulation Prepare contractual solutions to manage the railway operations on the ENR network (Infrastructure Manager and Service provider) Complete the rules to face the market opening

c	Prepare the market opening	Solicit private's contribution in the following areas: - Short connections - Rolling stock leasing - Simple traction services - Management of Logistics facilities - Non-core assets divestments
d	Define railway system standards to ensure interoperability	Define railway construction standards Define interoperability criteria domestic network and interoperability guidelines to promote continental interoperability
e	Build the system of fundamental railway skills	Improve specialised engineering training courses at academic (BSC and MSC) and TVET level Enlarge the disciplines involved in the improvement of railway culture (Economics, Management, Environmental Sciences) Complete the Rail academy project

3.3.3 Logistics and Maritime

Conversely to railways sub-sector, the sub-sector Logistics and Maritime (in short Logistics) accounts a long-time experience in managing the trade flows of goods that are crucial for a landlocked country. Despite this long-time operational experience, the performances of the sub-sector are unsatisfactory and the governments issued a National Logistics Strategy in order to enhance the effectiveness and efficiency of the sub-sector. Objectives and measures stated in the NLS and in the National Logistics Policy have been described in the previous reports (see also 2.2.1 in this report), they are a fundamental development program and it is strongly suggested to implement it.

Further strategic goals need to be suggested in order to complete that program, they are described as follows.

- a) Define a clear economic framework for the security of trade flows.
- b) Define and implement the economic and regulatory framework in view of market opening.
- c) Exploit the potential synergies between railways and logistics sub-sectors.

Define a clear economic framework for the security of trade flows.

It has been repeatedly said that the security of supplies of goods and food is a crucial issue for Ethiopia. The way in which the country has managed to guarantee these supplies focused on a chain of public subjects (MOT → EMA → ESLSE) which guaranteed the achievement of the objective, although without emerging in positioning the country on a decent rank in logistics performance. At sub-sectoral level this

underperformance is also one of the reasons to invoke a contribution of private sector to the national logistics business.

A strategy in the logistics sub-sector to ensure the security of trade flows must focus on the two components of this objective: one is subjected to the constraint of the economic efficiency of the activity (normal business) and the other can (or has to) relax the constraint to reach its goal. The latter component is often related with the need to reach other objectives, different from that of managing a profitable business. Both the case of foreign currency control and the ownership of the naval fleet are cases of public targets put in charge to the logistics sub-sector without considering the economic effects of this policies, both at single operator's and sub-sectoral level.

If the public chain mentioned above (with ESLSE at the end) can work with less commitment to economic efficiency, a private operator will not accept this kind of burden without having guaranties of its restoration. For this reason, it is important to define a clear economic framework for the security of trade flows which can be a reference for the logistics operators, ESLSE included.

In order to define the framework, it is useful to introduce the concept of service obligation. Considering the economic services as economic activities which deliver outcomes in the overall public good that would not be supplied (or would be supplied under different conditions in terms of objective quality, safety, affordability, equal treatment or universal access) by the market without public intervention, the latter action is service obligation. A service obligation is imposed (by a public authority) on the provider

by way of an entrustment and on the basis of a general interest⁴⁵. Such an obligation is a measure in force in EU legal framework, applied in any field of public service, for example postal services, social services, energy, transport⁴⁶.

This tool allows a public authority (for example, in Ethiopia, the MoTL or a Regional State, according to the scope of the obligation) to identify: i) the public interest; ii) the related service(s); iii) the reasonable net cost(s) for the production of the service(s). The outcome of this process should be drafted in a contractual form to be: a) negotiated with a selected company, or, b) proposed to a number of companies in order select the best offer through a competitive procedure.

In the logistics sub-sector this kind of solution could be used to restore ESLSE (or any operator in charge of the service obligation) of the net cost deriving from owning and managing the naval fleet of the country. The sectoral assessment, in fact, pointed out the losses of ESLSE deriving from managing the business of shipping, given the structure of the competition and the financial resources made available by the government.

In the case of foreign currency control, the use of ESLSE as the sole import provider is one of the means to centralise and control the FX demand and, accordingly, the exchange rate. This kind of provisions is the classic case of prevailing of an horizontal factor (external to the sector) compared to the sectoral objectives (i.e. efficient service providing). In this situation service obligations are not the suitable tool, while a review of markets restrictions through a revision of the customs measures should be evaluated.

Define and implement the economic and regulatory framework in view of market opening.

The opening of the logistics operations to private investors has the aim to finance new investments and introduce business innovation and skilled workforce/managers. This is in line with the HGER and the sectoral strategic goals suggested. Moreover, the policy definition at sub-sectoral level is advanced and the direction towards market opening and deletion of the monopolistic

position of ESLSE is not under discussion. What is under discussion and has to be clarified is how to implement this policy.

Opening the market to private investors means being able to build a supportive environment. To attract private investments in the present Ethiopian environment means design a framework for risks allocation of investment projects/business undertakings, able to give adequate guarantees to the investor. The meaning of this general statement in the logistics sub-sector requires to define in which area of the competition the sub-sector is supposed to operate: direct competition (open access to the market) or routes competition (competition for the market). In the latter case routes/corridor monopolies are established, while in the first case the competition is open wherever to all the operators, subject to the compliance with certain requirements. A direct example of the application of this criterion can be made in the case of dry ports: will dry ports be open to all future multimodal operators or, conversely, the new operators will have to build their own terminals (i.e. logistics capacity) to undertake multimodal business?

The first step of the NLS implementation seems to suggest that the liberalization model may be that of a competition between vertically integrated operators⁴⁷. The opinion of the Consultant is that the direct competition should be the more suitable approach for the privates' participation in the logistics sub-sector. It is necessary to avoid that, for the concern of obtaining an immediate response from the private sector to privatization projects, there is a transition from a regime of public monopoly to one of private route/corridor monopolies. On the contrary, it is necessary to make public assets, as dry ports are, available to all current and future operators to allow them to undertake

⁴⁵ EC, SWD(2013) 53 final/2, Guide to the application of the European Union rules on state aid, public procurement and the internal market to services of general economic interest, and in particular to social services of general interest. Brussels 2013.

⁴⁶ A similar approach is used in the United States in the aviation sub-sector. See the Airline Deregulation Act and its amendments for Essential Air Service providing.

⁴⁷ The long-awaited Multimodal Directive no. 802/2021, provides criteria for entering the market of multimodal services under a FoB regime, including the possession of assets (terminals, cranes, warehouses, trucks, etc) to a very significant extent. Such criteria depicts an environment in which each operator must own its assets before enter the market and the sole operator presently matching with these criteria seems to be ESLSE. While the operators reach the required logistics capacity, it is possible to obtain a temporary permit with slightly less stringent requirements than the ordinary ones. At the same time, the Directive allows to operate multimodal services outside the FoB regime with much less stringent criteria. The recent (Nov 2021) FoB Directive no. 858/2021, binds imports to the FoB regime the following categories: dry and bulk liquid cargos, steel, vehicles, containers, break-bulk cargo contained in bags, drums, boxes and project goods procured and imported by government agencies or private enterprises.

entrepreneurial initiatives and make complementary or growth investments. Both the use of assets and the related services provided, should be charged to restore at least the operating cost of access providing.

To make the opening of the logistics services effective, it is also necessary to review the mission of ESLSE, the public enterprise. As pointed out before, the new model of public intervention is based on the concept of level playing field among public and private operators, also in order to decrease the risk perception of the Ethiopian economic environment by private investors.

This review needs to be done in many respects:

- scope of services (distinguishing between non-liberalized activities and market activities);
- organizational separation between the units in charge of non-liberalized activities and the market units;
- adaptation of the accounting system to the organizational structure (business units accounting system) to have a transparent base for the cost calculation of different services.

Given the present organization of powers and duties of the Federal organs, the role of PEHA in this process is crucial. Thus, a clever coordination between MoTL and PEHA is required to complete the implementation of the liberalization path.

Exploit synergies between railways and logistics sub-sectors.

From the assessment of logistics and railways sub-sectors arises the scarce role of the latter as a potential partner of the logistics sub-sector's development. This gap is caused by two factors: i) the origin of multimodality concept in Ethiopia,

and ii) the absence of a modern railways service in the country just up to few years ago. The first factor is linked with the landlocked nature of the country and, accordingly, with the absolute need to solve the problem of the low efficiency (and high cost) of the Djibouti corridor. This urge led to a dominant aim which was that of transfer into Ethiopian territory the port terminals. The chain Multimodal Services → Dry Ports was considered as the only possible way to undertake multimodality (and it was so at that times) being only one of the possible faces of logistics chains.

At present times and, moreover, taking a long run vision, it is not difficult to imagine the potential of road-rail logistics services, overcoming the past obstacle of design something without having in mind its real ability to provide services. A forward-looking approach is needed to capture the opportunities arising from the integration of road and rail systems, dry ports, cargo airports and facilities, logistics services, industrial and agro-industrial parks, able to supply a network of services to move goods throughout the country.

In order to implement this path, some action have to be undertaken: i) a review of the regulatory framework, by a larger definition of multimodal services, including domestic providing; ii) promote investments by new market entrants to improve the road - rail link in dry ports; iii) promote investments by new market entrants in the reefer transport chain (road vehicles or rail wagons, warehouses, ICT applications and systems).

In the following table the main objectives and related policy measures are summarised. As stated above these proposals are to be considered as additional to those already proposed in NLS and NLP.

Table 18: Strategic goals and policy measures in the Logistics and Maritime sub-sector (To be taken upon completion of NLS and NLP)

GOAL	Objective	Measure
a	Define the Public Service Obligation for ownership and management of the naval fleet	Define criteria to define the service obligation Identify the scope of the service(s) Identify the net cost related to the service
a	Assign and negotiate with ESLSE the providing of the service(s)	Define a contractual scheme to negotiate the obligation for ownership and management of the naval fleet
b	Define the kind of liberalization approach	Update the National Logistics Policy towards the open access approach Revise/amend the MTO Directive and the FoB Directive Draft a Dry Port Directive
b	Develop a subsectoral risk analysis to have homogenous risk mapping and allocation criteria for Logistics investments	Define criteria for risk mapping in Logistics sub-sector Amend the PPP Directive

b	Review the mission and the structure of ESLSE	Review the scope and regime of services (market services/non liberalized services) Review accordingly the mission of business units according with the scope of service Adopt a suitable accounting system (accounting separation) for cost calculation of all the services
c	Review the regulatory framework to enlarge business opportunities	Revise/amend the MTO Directive
c	Promote business proposals from the private sector	Solicit private's contribution in the following areas: - development of road/rail links in dry ports - reefer logistics chain (warehouses, specialised vehicles/wagons, ICT applications and systems)
	NLS/NLP objectives	NLS/NLP objectives

3.3.4 Aviation

The development of the aviation sector in Ethiopia was a successful case. It was an example of a long-lasting process, which started from scratch and achieved a considerable international positioning and a leadership in Africa. Any sub-sectoral strategy has to be grounded on this finding.

Given the country's low rate of private motorization and the early-stage status of the railway network, the development of a set of air domestic connections could represent a real alternative for long distance connections throughout the country. Presently, the domestic market is at an early stage of development and less profitable for EAG compared to international routes. In the future, despite domestic unitary profit will not overcome the international one, the demand grow will make domestic business more profitable than now and this depicts a scenario of opportunities for investments in this market area. To exploit this kind of opportunities, both devoted to domestic or international private investors, it is necessary to avoid the risk that EAG play an adverse role, looking mainly at the international scenario and neglecting the development opportunities on the domestic side. To this purpose the role of the regulation authority must be preserved and enhanced.

Aviation should become a more widely used transportation mode for passengers and goods in Ethiopia within the horizon of the National Transport Masterplan. Aviation industry is also critical, both in terms of its significant contribution to the national economy and for the implementation of sustainability issues in the country. Therefore, the strong international positioning of EAG will have to be supported in the future also in view of the AfCTA implementation. At the same time, an effort to develop the domestic market is requested to improve the national transport sector.

The strategic goals defined at sectoral level can be organized for this sub-sector as follows.

- a) Develop the aviation domestic market implementing an effective market liberalization.
- b) Reinforce the capabilities of the regulatory institutions (ECAA, EAAIB) and of the workforce.
- c) Make sustainability a priority for the Ethiopian aviation industry.
- d) Prepare the AfCFTA implementation (SAATM) leveraging the competitive positioning of the country.

Develop the aviation domestic market implementing an effective market liberalization.

The sub-sectoral assessment pointed out that since the revision of the investment rules (2020) limitations for private operators have been lifted paving the way to the opening of the domestic market. From now on, potential market entrants are allowed to partner with Ethiopian national investors in passenger air transport services. It is advisable to undertake a practical implementation of the new rules for the domestic market by following a pro-competitive approach in favour of the private sector. The issue of space allocation and ancillary facilities in airports (Bole first) is an example, particularly in a situation of joint management of air services and airport infrastructure as in the EAG case. The development of private companies in the provision of ancillary services to aviation industry at all airports should be an objective of the domestic market development. Moreover, the development of national private operators in the field of specific air services (environmental crises, disasters, agriculture services, land protection) should be a further target.

The action of EAG in the domestic market should follow a twofold strategy. First, undertaking a path internal growth, expanding the network of served airports over time accordingly with demand and population growth, and introduce a flexible dynamic pricing system. Second, acting as an agent of change in order to make the domestic aviation industry more robust. this means that the airline should collaborate with local private operators and investors in order to create a new operator on the market through specific partnership agreements. It would be beneficial for the national air transport system to have at least one more Ethiopian organization that can rely on its own resources to offer aviation services on the liberalized domestic aviation market.

The domestic network of airports has been planned in the Transport TYP and it is consistent with the path above described. The implementation of the plan can benefit of the private's contribution, without being totally financed by state's resources and this calls for the selection of investment projects that should be guided by the opportunities more attractive for the private funding. This means to look at the more dynamics market segments characterised by privates' effort, like flower and fresh goods or pharmaceutical products, and involve the main stakeholders in financing the expansion of cold storage facilities jointly with other investors interested in build and manage such facilities.

Reinforce the capabilities of the regulatory institutions (ECAA, EAAIB) and of the sub-sectoral workforce.

Both the development of the domestic market and the implementation of the AfCTA requires a robust regulatory framework, in order to capture the sub-sectoral development opportunities without losing the positioning of the public enterprise, whose role is crucial for the economic environment of the country. Given the path of development, the present organization of the Civil aviation is still of good level and has to be fine-tuned to face the challenge described above. To this purpose, there are some issues to be enhanced.

First, skills and professionalism of the workforce of regulatory authorities has to be maintained over time and adapted to the technical progress and innovation. Second, the capacity of ECAA in air traffic management and communication, navigation and surveillance (CNS-ATM) has to be developed, also in view of the continental market development. Third, a further impulse in technical and economic regulation is requested because of

the future domestic competitive scenario. Further operators will probably enter the market, their ability to match with safety and quality requirements will have to be assessed and periodically checked, the surveillance of tariffs will take more effort than now. ECAA needs to be prepared to face with a more competitive environment. Fourth. The traffic increase will request more effort to EAAIB to be prepared to carry out its duties. The enhancement of its capabilities in terms of training, structure, cooperation with the international reference framework has to be taken in account.

Make sustainability a priority for the aviation industry.

Since the sustainability of the growth of the transport sector is one of the declared strategic objectives, the sub-sectoral structuring of this objective must start from the resolution of the ICAO, setting objectives both for the annual improvement of fuel efficiency and for carbon neutral growth. These targets should be assumed as guidelines for the further sub-sectoral development. This means that both air services and airport infrastructures have to embed these goals as a reference for their growth.

The evolution of the infrastructure needs to be guided by a sustainability approach and by the assessment of projects' viability at all levels: environmental, social and economic. In this context, environmental sustainability is the first area of consideration given the high impact of any aviation infrastructure, especially airports, on the environment and the need to avoid any impact that may have long-term negative consequences at local level. The assessment of those impacts has to be accurately carried out and embedded in the decisional process of the projects. In fact, sustainability emphasises the interdependence of environmental, social and economic development with the aim of securing environmental protection. It is therefore important for investment decisions to take environmental, social and economic implications into account. And investment decisions should be consistent with the environmental policy of the country and for the specific sector.

For airline services it is necessary to undertake efforts in implementing the ICAO programs of Carbon offsetting and reduction. The CORSIA project (Carbon Offsetting and Reduction Scheme for International Aviation) is currently been adopted by more than 100 countries, which, on a voluntary base, undertake a transition to reduce progressively the use of polluting fuels,

switching on sustainable fuels. The continental leadership of EAG would be enhanced by a progress in the sustainability of the company's operations.

Prepare the AfCFTA implementation (SAATM) leveraging the competitive positioning of the country.

The preparation of AfCFTA implementation finds the Ethiopian aviation sub-sector in a position of competitive advantage within the African continent. This position has to be defended, leveraging the benefits of being the main actor of the market, able to guide the process without hampering the growth of other continental operators, but considering the expected growth of the demand in a scenario of open continental market. In doing this, Ethiopia, whose public enterprise will have to face competition from non-continental global carriers, will have to reasonably play the role of "Continental champion".

A role of dominant African operator can probably be accepted more easily by renouncing the strict control over domestic airports such as the one currently operating. This means that the Ethiopian Airports business unit should be separated from the airline operator to create transparency and clear distance at financial and operational level between the infrastructure manager and the air service provider. This path calls for the separation of the airport business unit from the airline company, with two alternative options for achieving this separation. The first is to spin-off the airport management company and keep it within EAG as a subsidiary with its own accounts separate from other subsidiaries. Therefore, the spun-off company would remain within the perimeter of EAG but

would be separated from all other organizational units in terms of accounting and organization. The second option is to make the airport manager an entirely independent company outside the EAG perimeter and with its share capital owned by the government or a designated agency. In this case the spun-off and would operate as a fully privatized organization that guarantees fair non-discriminating treatment towards all market operators that require access to domestic airports for their aviation business. In our view the second option is the most adequate in the long term and this may also include opening the share capital of the airport management organization to private investors.

As stated before, the success in developing the aviation sub-sector of the country is based on a two-legs structure relying on a competitive company at international level and on skilled institutions able to cover the Civil Aviation duties. The latter side of the subsector will play a crucial role to maintain and improve the competitive positioning of the country at the continental level. In fact, given the landscape of progressive liberalization, being able to count on competent institutions, capable of setting, negotiating and leading the opening of the African market appropriately, can allow the country to expand its role also in the new scenario.

These considerations do not only have a strategic or policy implication, albeit fundamental, but also concern technological aspects, which require investments that allow the country to propose themselves as a supplier of navigation services for other countries, extending their leadership from the commercial sector to that of the institutions.

In the following table the main objectives and related policy measures are summarised.

Table 19: Strategic goals and policy measures in the aviation sub-sector

GOAL	Objective	Measure
a	Develop the domestic market	Solicit private's contribution in the following areas: - development of domestic passenger services - tourism chartered services - specialised services for civil/environmental protection
a	Develop the domestic market	EAG to expand the domestic network served EAG to collaborate with domestic operators to create a focused company for domestic services
a	Develop the domestic airport network	Solicit private's contribution in the following areas: - logistics facilities for cargo services (reefer chain, pharmaceutical chain)
a	Develop a sub sectoral risk analysis to have homogenous risk mapping and allocation criteria for sub-sectoral investments	Define criteria for risk mapping in aviation sub-sector Amend the PPP Directive
b	Improve the Civil Aviation capabilities	Fields of improvement

GOAL	Objective	Measure
	(ECAA, EAAIB)	- air traffic management - technical and economic regulation - infrastructure and facilities - aviation safety (GASP)
c	Prioritize sustainability of aviation sub-sector	Establish ESIA procedure for new airports/airstrips Define with EAG a road map to make the country join the ICAO - CORSIA project.
d	Prepare the AfCTA implementation	EAG goes on its continental-scale commercial alliances
		Choose the kind of separation between airports and airline services
		Improve the international projection of the country's Civil Aviation in Africa in order to lead the AfCTA implementation for the aviation sector.

3.3.5 Inland Waterways

The assessment enlightened a sub-sectoral status of scarce development. The main issue to be faced at institutional level is that of governance, both at transport's sector level (who is in charge to develop and organize it?) and horizontal level. In fact, as rivers are not only a transport route but above all a crucial resource for agriculture, local communities and tourism development, a coordination among transport related activities and other activities is requested.

According to the Constitution, the responsibilities appear to be up the Regional states, both for infrastructures to be developed and services to be regulated. Despite this, for LTA case on Tana Lake there seems to be the idea to merge the company within ESLSE, which might be in charge of a further mission.

Besides the governance issues some further findings have to be pointed out. The first regards the legal framework, which has to be set up in order to make possible the development actions both by public and private subjects. The legal areas to be improved concerns the navigation rules and the insurance system for service providing.

The early stage of the sub-sector makes also crucial the issue of professional capabilities. Naval architects and Naval engineers seems to be the most important professional roles needed to make possible the development of investments and services. This gap seems to be present both at Federal and Regional state's level.

Following to the considerations above, the strategic goals at sub-sectoral level can be defined as follows.

- a) Establish a suitable level of horizontal coordination among transport activities and all the activities related to the rivers and water use.
- b) Support, at Federal level, the Regional administration, to develop investment and service providing development.
- c) Set up the legal framework by drafting the basic rules for service providing.
- d) Improve the professional capabilities of the sector.

A place of coordination, in which all the needs related to the use of water resources can be considered and ordered on the basis of explicit priorities, seems necessary. This may be at Federal level, through a specific coordination of the concerned Ministries and technical authorities, as the current Basin Development Authority. Inland water transport study team/committee shall be organized by Basin Development Authority or other Ministries concerned to understand which rivers are suitable for water transport.

On the basis of the results of the study, the ministries concerned will be able to indicate the priorities for the use of water resources and the possibilities of use for transport purposes. In turn, the Ministry of Transport may set up a coordination and follow-up unit for the subsector of inland waterway transport. Following this federal coordination, the Regional States will carry out the ordinary activities of administration and management of transport through the Transport Bureaus. MoTL shall provide technical support for the regional water transport organs/units.

In the following table the main objectives and related policy measures are summarised.

Table 20: Strategic goals and policy measures in the inland waterways sub-sector

GOAL	Objective	Measure
a	Establish a suitable level of horizontal coordination among transport activities and all the activities related to the rivers and water use.	Provide a coordination at Federal level on the use of water resources Provide a study to identify possible transport use of country's water resources
b	Support, at Federal level, the Regional administration, to develop investment and service providing development.	Establish a specialised unit in charge to Inland waterways at MoTL Support the Regional State's in the implementation of investment and service providing projects
c	Set up the regulatory framework	Draft and implement the rules of on rivers Draft and implement the insurance systems for service providing on rivers
d	Improve the professional capabilities in Naval architecture and Naval engineering both at Federal and regional level	Identify the professionals required in Federal and regional institutions Select and hire Naval architects and Naval engineers

3.3.6 Urban and Public Transport

Ethiopia has a current estimated population (2020) of over 112 million, which is expected to grow to more than 126 million by 2025, reach 153 million by 2035 and exceed 190 million in 2050. It is the third most populous country in Africa but it has a relatively low urbanization rate. This means that, even considering the growth, Ethiopia will likely maintain lower urbanization levels than other areas, regions, countries, and income levels.

The settlement dynamics of the country has followed historically consolidated roads and directions that reflect both the history of Africa and Ethiopia itself. The analyses carried out have identified the presence of spontaneous development corridors: according to the Report 7 - Urban and Public Transport, these 9 corridors host in fact 80% of the population.

Towns in Ethiopia share many common traits which create important urban mobility challenges, including significant urbanisation and population growth, with most centres exceeding the threshold of 50k inhabitants over the next 30 years. Transport policy in Ethiopia needs to be generally focused on reducing environmental impacts and improving performance by minimising noise, congestion, disruption, pollution and inconveniences and improving vehicle efficiency. All these measures require a policy framework encompassing regulatory mechanisms to be enforced effectively, so that behavioural change can be achieved and conflicts between transport and sustainable development in urban environmental goals can be overcome. Furthermore, it should be noted that this type of

measures should be implemented in an institutional environment (at the regional/municipality level) which is poorly prepared to address these issues, as it is still affected by a process of 'primary institutionalization'⁴⁸.

This subsector is closely connected to the road subsector for two main reasons: i) the sub-sector is based almost exclusively on road mode and ii) is defined as a series of urban areas, stand-alone or interconnected areas, which belong to a local level of governance. Accordingly, Urban and Public transport sub-sector shares an important part of its strategic goals with the road sub-sector.

Following the above considerations, the strategic goals defined at sectoral level can be organized for this sub-sector as follows.

- a) Providing and promoting sustainable connections.
- b) Develop a suitable regulatory framework and enhance the institutions' capabilities.
- c) Promoting sustainable behaviours and patterns of mobility.

Providing and promoting sustainable connections.

Urban and Public transport are presently based on road infrastructures and vehicles. The aim of adopt a sustainable transport system means to

⁴⁸ Excluding the Capital City and a few sporadic examples of specific good practices.

undertake a transition from a present unimodal transport system (excluding Addis Ababa) towards a future multimodal one with the aim to implement, at the end of the process, advanced mobility systems like the MaaS concept. Apart from the institutional/governance issue (see below), the transition to be undertaken requires a strong evolution of the operators of transport services, both public and private. Both will have to evolve towards more structured and efficient business models, investing in systems (infrastructures, vehicles, technologies) capable of responding both to mobility needs and to reducing the impact of mobility itself. The growth of mobility flows implies a trend of increase in vehicles' size and calls for greater investments' cost and more structured companies.

The aforementioned evolution will have to affect both urban mobility strictly understood and the movements along the nine mobility corridors identified in the Report 7. The actors in the supply of services in these two areas will not necessarily be the same, on the contrary, due to the distance and the number of trips, different technological solutions may also arise.

In the urban areas assessed (more than 50.000 inhab.) the need for buses almost doubles in 2035 and grows by 280% by 2050 and this depicts a scenario oriented towards the development of mass transit systems. The transition from the current, scarce and unplanned set of mobility services to a multimodal mass transport system must be prepared not only at the institutional level but also by helping the private (and public) supply of services to evolve their own supply of services. services consistent with the scenario just described.

At urban level, the high growth of vehicles needed to meet the demand for transport depicts a big space for private and public operators acting in an integration logic (transport system) and the public intervention take firstly the form of design and planning of the system and then, if private supply does not match the needed level of services (for frequencies, quality and tariffs), and secondly through direct intervention. To this latter purpose, public local enterprises should enhance their organizational structure, investments' program and knowledge of managers and workforce, in order to be able to grow together with the citizens' demand.

The increase of bus size which follows the increase of demand will lead to investments cost increase and calls for more structured companies able to undertake and manage financial efforts.

This, in turn, opens a big space for private domestic investments flows, to be likely covered to a significant share of domestic earnings or by domestic investors.

The urban environment is also favourable to innovation, given a generally higher level of technological literacy of citizens. Urban transport systems, which are characterized by an high level of ICT application to manage mobility and incentivize the mass transport use, should be developed in order to catalyse the innovation ability of the domestic environment.

Develop a suitable regulatory framework and enhance the institutions' capabilities

This action is the core of the transport policy for Urban and Public Transport sub-sector. Development corridors and main urban centres, which includes the major urban settlements and the greater part of manufacturing plants, call for an institutional skeleton stronger than the one in currently in force, both at Regional State's and at local level. They need more qualified and specialized institutions (and human resources) than now. This has already been highlighted in the case of the road sector, with which there is a strong overlap of policies. In fact, the need already described to review the organization of RRAs and Transport Bureaus is precisely aimed at strengthening, but often at founding, local institutions capable of planning and managing the phenomena of mobility. Even more there is an overlap in the case of measures concerning the planning and supplying services. In fact, the introduction of Public Service Obligations, Public Service Contracts, Tariff Obligations and of competitive procedures for allocating services, are all fundamental measures already reported as necessary in the case of the road sub-sector.

The main solutions to manage future mobility phenomena have been described in the Report 7 - Urban and Public Transport. The regulatory framework needed to manage these phenomena request to define some important tools and to provide their implementation: i) adoption of Sustainable Urban Mobility Plans (SUMP) in the Ethiopian major cities; ii) establishment of Corridor Mobility Agencies to manage the mobility phenomena within the identified corridors; iii) taking the concept of "Mobility As A Service" (MAAS) as a perspective of long-term planning of the mobility within the corridors.

The adoption of SUMP for great urban settlements it is recommended because the aim of such a plan is not simply to plan the mobility flows but to enhance the quality of life of both city inhabitants

and users. Quality of life refers to a great number of the goals included in the SDG Agenda, which has been adopted by Ethiopia as one of the guidelines for its long-term growth. The suggested target is that of cities with a minimum of 100,000 inhabitants. The need of Corridor Mobility Agencies means recognizing that corridors are homogeneous in terms of mobility needs, as they express not only a much greater propensity to move than in rural areas but also a variety of travel motivations that need evolved, coordinated, and integrated mobility offer systems. The concept of MAAS retains that, in the presence of urban agglomerations with high travel frequencies through different physical means, a single travel technology (car, subway, etc.) or a simple sum of them is not yet sufficient to solve the problem of accessibility of transport services.

Promoting sustainable behaviours and patterns of mobility

Besides the actions aiming at providing sustainable mass transport systems and a

consistent regulatory framework, it is important to orient the citizens' behaviour towards the choose of less impacts movements. To this purpose the policies already mentioned for the road-subsector are the main path to undertake in the urban environment. It is of crucial importance that behavioral change can be achieved and conflicts between transport and sustainable development can be overcome.

To this purpose the implementation of the Non-Motorised Transport Strategy, already defined, is in line with the goal of promoting sustainable patterns of mobility. In the long term this could mean to transform the present high market share of pedestrian mobility from a weakness signal (low-income mobility) to an opportunity towards the adoption of low impact mobility models.

In the following table the main objectives and related policy measures are summarised (goals and measures already described for road sub-sector are reported in *Italic*).

Table 21: Strategic goals and policy measures in the Urban development/Public transport sub-sector

GOAL	Objective	Measure
a	Move from a single-modal service offering to a multimodal system	Promote integrated transport systems at urban level in the main cities Increase the travel options within cities and at regional intersections
a	Enhance the capabilities of the services' providers	Promote the growth of private transport companies and their reliability Support the growth of public transport companies
R	Provide public budget to Regional States to finance PSO. Introduce an allocation constraint for the budget transferred	Amend the Federal budget procedure
R	Define criteria to ensure a minimum level of service providing in the country Introduce the concept of Public Service Obligation	Define PSO for both public and private operators. Define PSC for service providing. Define tariff schemes
R	Introduce competitive procedures to assign PSO in order to minimise the financial disbursements	Prepare a procurement procedure for PSO
b	Define and implement the Sustainable Urban Mobility Plan (SUMP)	Provide guidelines for SUMP's definition and implementation Define a road map for SUMP's implementation Support the concerned Municipalities in the SUMP implementation
b	Define and establish Corridor Mobility Agencies	Assess and define the development corridors requesting a Corridor Agency Undertake the procedure of Undertake the procedures of Federal Government Public Projects Administration and Management System to define the road map of CMA
b	Introduce pilot project of MAAS concept and technologies	Select project proposals to be financed

GOAL	Objective	Measure
c	Promoting sustainable behaviours and patterns of mobility	Implement the Non-Motorised Transport Strategy

3.3.7 Tourism

Despite tourism it is not a transport sub-sector, this part of the document aims at frame this economic sector within the transport development issues. Tourism is a very important component of the transport demand which needs to face and overcome various challenges to transform itself into real demand flow.

For a country like Ethiopia, tourism has the potential to help generating major socio-economic progress, to create new jobs and therefore reduce poverty in regional areas and establish sustainable development.

Ethiopia is characterized by diverse natural, cultural and historical tourist attractions. The country has many of the elements needed to become one of the leading tourist destinations in Africa, and indeed an emerging destination at global level. Ethiopia has been recognized as the cradle of mankind and boasts the highest

number of UNESCO heritage sites in any African country. The country is also known as the origin of coffee and produces high quality arabica coffee beans. In addition, Ethiopia is famed for landmark sites such as the rock-hewn Lalibela churches, ancient Mosques, highlands and national parks, Aksum obelisks, Blue Nile trace, Semein mountain, as well as Gondar palace and the National Museum of Ethiopia in Addis Ababa where the extraordinary Lucy Skeleton, a fossil discovered in Ethiopia in 1974, is visible.

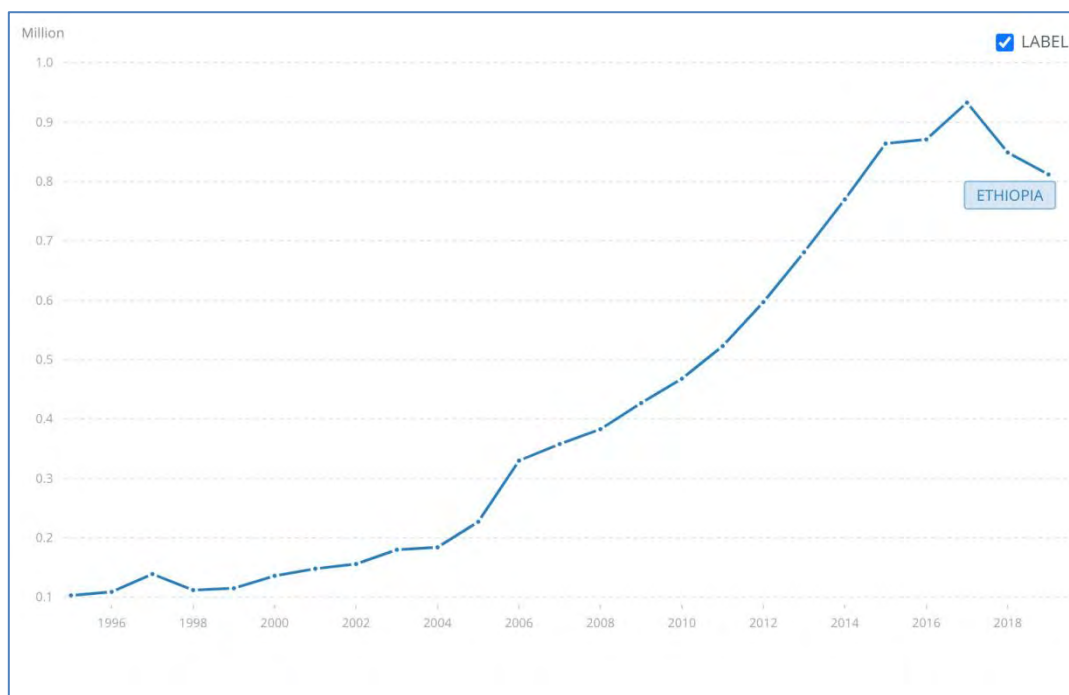
As shown in the following paragraph, regardless of the high tourism potentials, the number of tourists flowing to Ethiopia has not been proportionate and the country needs a new and appropriate tourism strategy to become a preferred destination for major outbound international tourist markets.

3.3.7.1 Tourism based travel demand

Where Ethiopia starts from in terms of tourism industry, is represented by the following figures from the World Bank that illustrate international

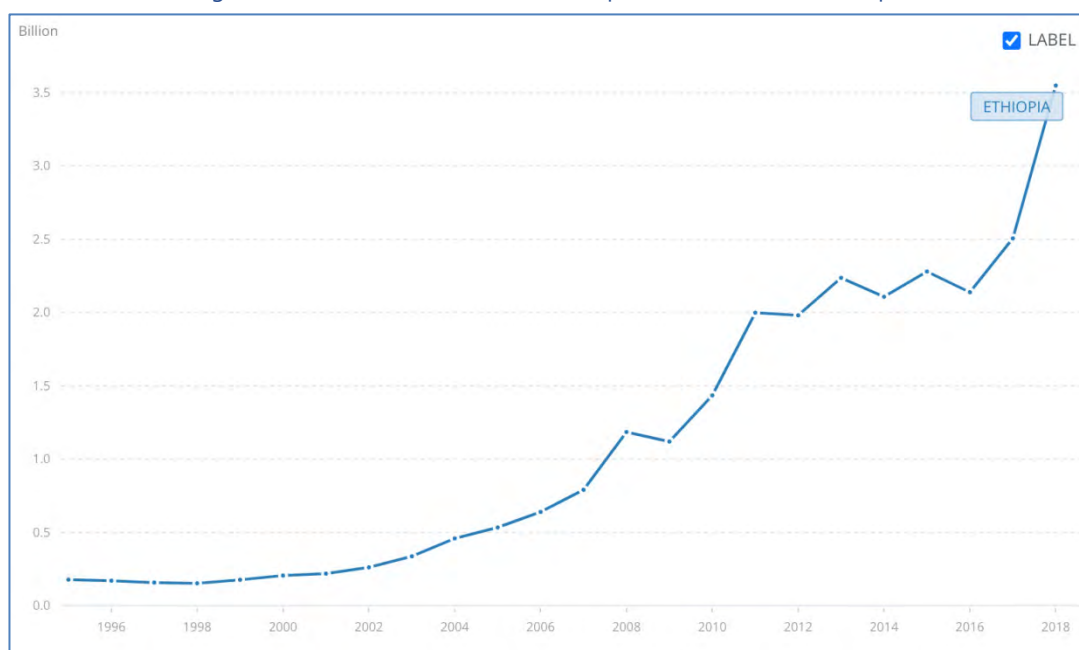
arrivals (million) and related receipts for the country (USD billion).

Figure 19: International tourism, number of arrivals - Ethiopia



Source: World Bank, <https://data.worldbank.org/indicator/ST.INT.ARVL?end=2019&locations=ET&start=1995>

Figure 20: International tourism, receipts (current US\$) – Ethiopia



Source: World Bank, <https://data.worldbank.org/indicator/ST.INT.RCPT.CD?end=2019&locations=ET&start=1995>

As it can be seen from the above figures, before Covid-19 global pandemic that has impacted international tourism all over the world, in 2019 international arrivals to Ethiopia totaled 812,000

confirming a decrease trend from the peak of 933,000 in 2017, and 849,000 in 2018. As for valuable receipts generated from international tourism in US dollars the level was 3.5 billion in 2018, the latest available data available.

Table 22: International tourism arrivals and receipts (US\$ million) – Ethiopia

ETHIOPIA	2010	2011	2012	2013	2014	2015	2016	2017	2018
INT.L TOURISM, RECEIPTS (US\$ M)	1,434	1,998	1,980	2,236	2,107	2,279	2,138	2,505	3,548
INT.L TOURISM ARRIVALS N.	468,000	523,000	597,000	681,000	770,000	864,000	871,000	933,000	849,000
AVERAGE RECEIPTS PER INTERNATIONAL TOURIST (US\$)	3,064	3,820	3,316	3,283	2,736	2,637	2,454	2,684	4,179

Source: World Bank

The above table shows that international tourism is a very important source of foreign currency to Ethiopia. Although international tourism arrivals kept decreasing from 2017 to 2019 and 2020 due to the Covid-19 pandemic, international tourism receipts have been growing in the same period. Given the smaller base of visitors, the average receipts per international tourist, after a period of decrease, has recorded good growth. In 2018, average receipts were over USD 4K per international tourist.

International tourism arrivals to Africa provided in the next table show very clearly that there are different clusters of destination countries. In 2019, the leading African destinations were South Africa, Egypt, and Morocco; each one recorded over 13 million arrivals yearly in pre Covid-19 times.

Nigeria stands alone with over 5 million international tourism arrivals in 2016 (no more recent data available).

Then a large group includes those countries with international arrivals between 1 and 1.3 million international arrivals: Nigeria, Zimbabwe, Algeria, Kenya, Cote d'Ivoire, Mozambique, Botswana, Namibia, Rwanda, Tanzania, Senegal, Mauritius, Zambia, Lesotho.

A fourth cluster of countries with international tourism arrivals between 500K and 1 million includes Ethiopia, Cameroon, Ghana, Malawi, Sudan, Democratic Republic of Congo, and Togo. The remaining countries achieve less than 500K international tourism arrivals.

World Bank data show that Ethiopia is positioned 19th among the African countries in terms of

international tourism arrivals (next table).

Table 23: International tourism arrivals

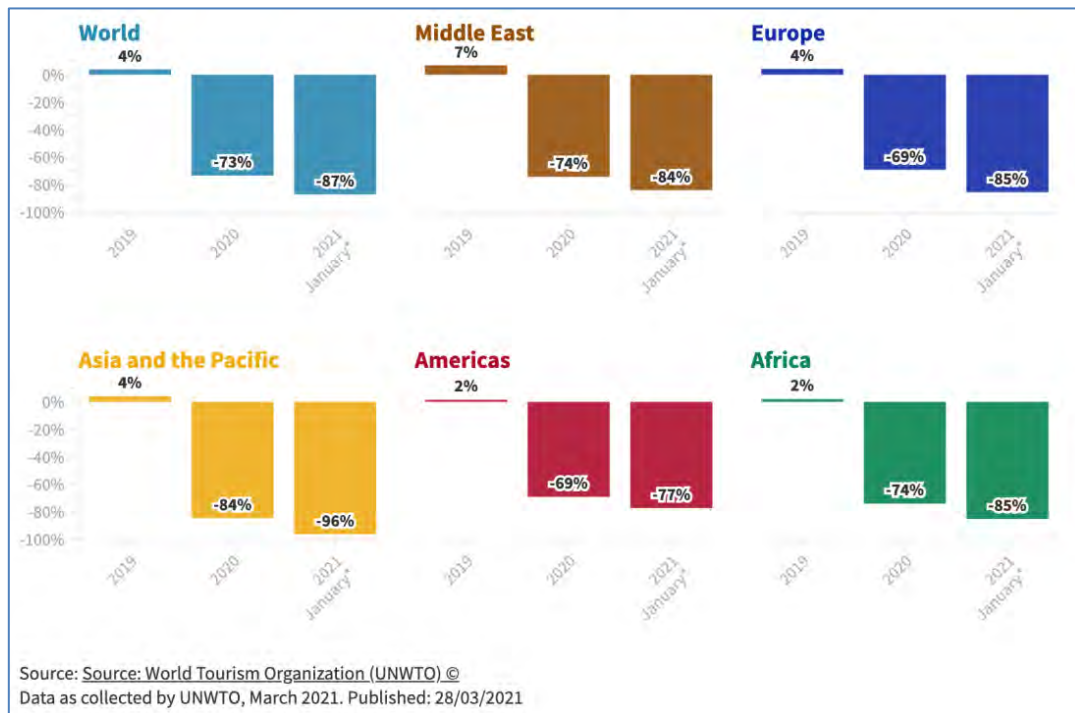
N. Country Name	Country Code	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
1 South Africa	ZAF	11.303.000	12.097.000	13.069.000	14.318.000	14.530.000	13.952.000	15.121.000	14.975.000	15.004.000	14.797.000
2 Egypt, Arab Rep.	EGY	14.731.000	9.845.000	11.532.000	9.464.000	9.878.000	9.328.000	5.399.000	8.292.000	11.346.000	13.026.000
3 Morocco	MAR	9.752.000	9.784.000	9.830.000	10.349.000	10.507.000	10.542.000	10.677.000	11.540.000	12.489.000	13.109.000
4 Nigeria	NGA	6.113.000	3.765.000	4.673.000	4.038.000	4.803.000	6.017.000	5.265.000			
5 Zimbabwe	ZWE	2.239.000	2.423.000	1.794.000	1.833.000	1.880.000	2.057.000	2.168.000	2.423.000	2.580.000	2.294.000
6 Algeria	DZA	2.070.000	2.395.000	2.634.000	2.733.000	2.301.000	1.710.000	2.039.000	2.451.000	2.657.000	2.371.000
7 Kenya	KEN	1.609.000	1.823.000	1.711.000	1.520.000	1.350.000	1.181.000	1.340.000	1.449.000	2.025.000	2.049.000
8 Cote d'Ivoire	CIV	252,000	270,000	289,000	380,000	471,000	1.441.000	1.583.000	1.800.000	1.965.000	2.070.000
9 Mozambique	MOZ	1.836.000	2.013.000	2.206.000	1.970.000	1.751.000	1.634.000	1.715.000	1.514.000	2.870.000	2.033.000
10 Botswana	BWA						1.660.000	1.712.000	1.775.000	1.830.000	
11 Namibia	NAM	1.114.000	1.163.000	1.245.000	1.327.000	1.429.000	1.488.000	1.551.000	1.581.000	1.639.000	1.651.000
12 Rwanda	RWA	667,000	908,000	1.061.000	1.122.000	1.220.000	1.298.000	1.377.000	1.570.000	1.711.000	1.634.000
13 Tanzania	TZA	783,000	868,000	1.077.000	1.096.000	1.140.000	1.137.000	1.284.000	1.327.000	1.506.000	1.527.000
14 Senegal	SEN	906,000	977,000	967,000	1.069.000	976,000	1.014.000	1.219.000	1.376.000		
15 Mauritius	MUS	956,000	983,000	984,000	1.015.000	1.065.000	1.174.000	1.307.000	1.371.000	1.431.000	1.418.000
16 Zambia	ZMB	815,000	920,000	859,000	915,000	947,000	932,000	956,000	1.009.000	1.072.000	1.266.000
17 Lesotho	LSO	426,000	398,000	423,000	433,000	1.079.000	1.082.000	1.196.000	1.137.000	1.173.000	1.142.000
18 Cameroon	CMR	573,000	604,000	817,000	783,000	822,000	897,000	994,000	1.081.000	997,000	
19 ETHIOPIA	ETH	468,000	523,000	597,000	681,000	770,000	864,000	871,000	933,000	849,000	812,000
20 Ghana	GHA	931,000	821,000	903,000	994,000	825,000	897,000				
21 Malawi	MWI	746,000	767,000	770,000	795,000	819,000	805,000	849,000	837,000	871,000	
22 Sudan	SDN	495,000	536,000	575,000	591,000	684,000	741,000	800,000	813,000	836,000	
23 Congo, Dem. Rep.	COD	81,000	186,000	167,000	191,000	334,000	354,000	351,000			
24 Togo	TGO	202,000	300,000	235,000	327,000	282,000	273,000	338,000	514,000	573,000	876,000
25 Seychelles	SYC	191,000	210,000	216,000	237,000	239,000	296,000	333,000	382,000	405,000	428,000
26 Madagascar	MDG						282,000	333,000	285,000	360,000	486,000
27 Benin	BEN		222,000	232,000	252,000	265,000	279,000	292,000	307,000	322,000	337,000
28 Niger	NER	74,000	82,000	94,000	123,000	135,000	135,000	152,000	164,000	157,000	192,000
29 Mali											
30 Congo, Rep.	COG	199,000	224,000	259,000	345,000	229,000	224,000	213,000	151,000	158,000	
31 Burkina Faso	BFA	274,000	238,000	237,000	218,000	191,000	163,000	152,000	143,000	144,000	143,000
32 Central African Republic	CAF	53,800	65,400	70,800	83,500	95,700	120,500	82,000	107,000	109,000	
33 Burundi	BDI	142,000	144,000	147,000	234,000	235,000	131,000	187,000	299,000		
34 Sierra Leone	SLE			75,000	95,000	53,000	31,000	60,000	59,000	66,000	71,000

Source: The World Bank, World Development Indicators, May 2021

Covid-19 pandemic has reduced international travel by 80% at global level, and most countries had to close their borders and to enforce lockdown. This has impacted the global and local

tourism industry. A synthetic view of changes in international tourism arrivals per world region is provided in the next figure. It clearly shows the strong impact Covid-19 pandemic has had for Africa tourist flows from 2019 to 2021.

Figure 21: Change %, International tourism arrivals



Source: UN World Tourism Organization, <https://www.unwto.org/taxonomy/term/347>

According to the World Travel and Tourism Council (W TTC), over the past 20 years, tourism has become vital to African economies. In 2019, the industry accounted for about seven percent of Africa’s GDP and contributed USD 169 billion to its economy⁴⁹ - about the size of Côte d’Ivoire’s and Kenya’s combined GDP. Africa’s travel and tourism sector employed more than 24 million people in 2019.

In July 2020, the African Union⁵⁰ estimated that Africa lost nearly USD 55 billion in travel and tourism revenues and two million jobs in only the first three months of the Covid-19 pandemic. The International Monetary Fund⁵¹ predicted that real GDP among African countries dependent on tourism shrunk by 12% in 2020. It is possible that Africa might take longer to recover than other regions due in part to a lack of domestic and intraregional demand and the sector’s weaker supply chain.

W TTC highlights that domestic tourism accounted for 55% of travel and tourism spending in Africa in

2019, below the contribution of local tourism in North America (83%), Europe (64%) and Asia-Pacific (74%). Domestic tourism accounted for 73% of the total global tourism spending in 2017.

A country like Ethiopia should invest in developing a modern and high-level tourism infrastructure in order to become more attractive on the international market. Being Ethiopia rich in natural diversity and untouched areas, it should include a sustainable development approach in its tourism policy for the whole country. This would help attracting additional tourism flows from abroad and generating major socio-economic progress.

Even if Ethiopia is gifted in terms of heritage and tourism potential, the country seems unable to attract proportionate number of tourists from abroad.

Data available from open sources show that Ethiopia has started working with a planning approach to develop appropriate tourism strategies aimed at modernizing the country and transforming it into a preferred destination for major outbound tourist markets. And given the close trade ties so far developed with China, it would be good to try to attract tourism demand from Asia in general and China in particular.

United States, China, and UK are the largest source of international tourism demand to Ethiopia. According to the website of the Forum

⁴⁹ World Travel and Tourism Council, <https://wtcc.org/News-Article/Urgent-Appeal-to-International-Community-to-Support-African-Travel-and-Tourism-Sector>

⁵⁰ Reuters, Africa lost almost \$55 billion in travel and tourism due to pandemic: AU, <https://www.reuters.com/article/uk-health-coronavirus-africa-idUSKBN2431N0>

⁵¹ International Monetary Fund, <https://www.imf.org/external/pubs/ft/fandd/2020/12/impact-of-the-pandemic-on-tourism-behsudi.htm>

on China-Africa Cooperation⁵², the Ethiopia Ministry of Culture and Tourism (MoCT) disclosed that Ethiopia had 9,925 Chinese tourists in 2020 who generated around USD 37.2 million in revenue from, making China the second largest source of tourists visiting Ethiopia.

In addition, arrivals from China in 2019 were 41,837 with revenues of USD 157 million⁵³, significantly lower than those of 2018 when Ethiopia recorded USD 190 million in revenue from 50,626 Chinese tourists who visited the country. The 2018 data represented a 11.7% growth in tourist arrivals from China to Ethiopia compared to the total arrival of 45,307 in 2017⁵⁴.

It has to be taken into account that a part of such demand is business oriented since Addis Ababa is the headquarter of many international institutions and also the base for humanitarian organization working in the horn of Africa. The range of purposes for visitors includes conferences, business trips and leisure travel.

Looking at the future it is reasonable to believe that tourism flows from China have potential to grow significantly. The increasing Chinese investments in Ethiopia related to the continual implementation of the “opening-up” policy and the historical diplomatic and strategic partnerships between the two countries will soon include tourism as one of the industries for expansion⁵⁵.

It is therefore advisable that Ethiopia keeps dedicating special effort to China as target market for international tourism. However, Ethiopian tourism authorities should also be aware that most of the other global tourism destinations are competing to attract Chinese tourists since they represent an important segment of international demand both by quantity and quality in terms of potential expenditure.

Therefore, given the fact that so many destinations are in competition to attract Chinese demand, it is advisable that Ethiopia maintains a focus on addressing its investments to attract tourism also from other countries, and especially from USA and Europe. It would be in fact too risky to focus only on one market especially for a

future where it is not yet clear how tourism demand will evolve at global level.

In addition, Ethiopia needs to create the conditions for the development of domestic tourism. Currently Ethiopians tend not to travel much within their country. There is a very limited amount of local people who can afford traveling, and often they go abroad to foreign destinations rather than visiting Ethiopia. There are many academic papers available on internet that show how important it would be to have a consistent domestic tourism industry also in Ethiopia. At international level, domestic tourism represents the most part of the sector demand and generates most of the flows. International tourism requires the crossing of the international border and it's easier to track than domestic tourism. For this reason, domestic tourism is less visible and its impact more difficult to estimate. However, the domestic overnight leisure tourism market is a key segment in many countries where the number of domestic tourists within these two countries exceeds that of all international inbound tourists. Ethiopia is rich in tourist attractions also for domestic tourism development. Within the next decades projected growth rates of the national economy and of population are of such magnitude that it can be assumed that a larger segment of the population will be in the position to afford traveling. It would be of high importance that these people travel within their country and not only abroad.

⁵² Forum on China-Africa Cooperation, http://www.focac.org/eng/zfgx_4/jmhz/t1847485.htm

⁵³ Chinese tourists contribute \$157 million in 2019, <http://global.chinadaily.com.cn/a/202002/28/WS5e5864e4a31012821727af0e.html>

⁵⁴ Interview: Ethiopia seeks to attract more Chinese tourists, http://www.xinhuanet.com/english/2019-04/09/c_137963479.htm

⁵⁵ Ethiopia's new tourism strategy to attract 1 million Chinese tourists in five years, August, 2019, <http://en.people.cn/n3/2019/0823/c90000-9608694.html>

3.3.7.2 Governance of Tourism in Ethiopia

Tourism in Ethiopia is managed through the following different organizations:

The **Minister of Culture and Tourism** (MoCT) is the policy-making and regulatory body at federal level for the tourism sector. Under the Ministry and are autonomous organizations such as: the Authority for the Research and Conservation of the Cultural Heritage, the National Archives and Library Agency, the National Theatre, the Hotels and Tourism Works Training Center, the Sport Commission. The Ministry is responsible for preparing tourism policies, regulating and grading tourism accommodations and cultural restaurants, as well as licensing national incoming operators and national guides. Within MoCT is a Statistics Directorate in charge of elaborating and disseminating the official statistics for the sector. The Minister of Culture and Tourism has its own website (<http://www.moct.gov.et/>) that unfortunately is not accessible as of August 2nd 2021.

The **Tourism Board** oversees Tourism Ethiopia activities, provides guidance, reviews and approves work programs and budgets, and evaluates the performance of the Organization.

Tourism Ethiopia. In 2013, the Government of Ethiopia proclaimed Federal Regulation 294/2013, which established the Tourism Transformation Council, the Ethiopian Tourism Organization (ETO) and the Tourism Board. In 2018, the government created a new institution called "Tourism Ethiopia" through Article 32(2) of Proclamation No. 1097/2018. Tourism Ethiopia inherits all rights and duties of the Ethiopian Tourism Organization. Tourism Ethiopia is directly accountable to the Prime Minister; and mainly it focuses on tourism development and marketing, enhance the benefits of tourism, foster competitive and sustainable tourism development, and provide leadership and mobilize stakeholders.⁵⁶

According to information available on the website of Tourism Ethiopia, the government organization to promote tourism in Ethiopia, "the Growth and Transformation Plan 2010/11-2014/15 prepared and approved by the Federal Government of Ethiopia considered tourism together with culture as cross cutting sectors and set-up as strategic directions to enhance the role tourism and culture play in socio-economic and political development initiatives. Considering the pace of growth of tourism arrivals and

investment in tourism as well as the potential for further development, the new Growth and Transformation Plan for 2015/16-2019/20 has recognized tourism as one of the top five strategic economic sectors in Ethiopia."⁵⁷

In addition, Tourism Ethiopia website states that (August 2021):

- mission of the organization is to "develop the country's tourist destinations in collaboration with various stakeholders, market and promote the destination at national and international level through employing competitive marketing and promotional strategies."
- vision of Tourism Ethiopia is "Making Ethiopia among the top five tourist destinations in Africa by 2025".

The website of the organization is providing information mostly to potential investors rather than to potential tourists. In fact, to find information about Ethiopia and about tourist destinations within the country it is necessary to scroll down to the bottom of the page. This looks ineffective in terms of promoting the destination.

Over time Ethiopia has benefited of financial resources provided by many international donors to improve the country's tourism development. Among such programs three are notable of being mentioned:

1. the Ethiopian Sustainable Tourism Development Project (ESTDP) over the period 2010-2015, a USD 30 million World Bank loan operation with the Ministry of Culture and Tourism that financed many projects in tourism field.
2. the UNDP, in 2015 supported the then newly established ETO by providing funds to open and equip a new office and finance some temporary staff. The UNDP also financed some technical assistance activities at a later stage.
3. European Union Promoting Heritage for Ethiopia's Development (PROHEDEV), a EUR 10 million EU grant implemented by the Ministry of Culture and Tourism that started implementation in 2015. This program supported culture to further Ethiopia's cultural and socioeconomic development as well as protecting and safeguarding its heritage for the future wellbeing of the nation.

⁵⁶ See note 8.

⁵⁷ Tourism Ethiopia, <https://tourismethiopia.gov.et/about-us/>

Over time other cooperation projects have been financed by bilateral organizations and NGOs with focus on:

1. Conservation and management of natural resources and related economic development.
2. Training and human resource development.

3.3.7.3 Positioning of Ethiopia in the Tourism market

The World Economic Forum (2019)⁵⁸ ranked Ethiopia 122th (out of 140 countries) in its Travel and Tourism Competitiveness Index (TTCI). This rank is a worsening compared to 2017 when Ethiopia ranked 166th. Ethiopia still lags behind other African countries, well established tourism destinations such as Kenya, Tanzania, Rwanda and Uganda. Ethiopia's seems to be characterized by a relative lack of competitiveness.

⁵⁸ World Economic Forum (2019): The Travel & Tourism Competitiveness Report, 2019 Edition
<https://www.weforum.org/reports/the-travel-tourism-competitiveness-report-2019>

Year	TTCI Ranking Ethiopia
2009	123
2011	120
2013	122
2015	118
2017	116
2019	122

In a recent study by CBI, a Netherlands based organization, the country's competitors' analysis was conducted in relation to key tourism destinations of similar or larger scale than

Ethiopia in East and Southern Africa and the Gulf region. These include Jordan, Egypt, Kenya, Tanzania, Uganda, and South Africa. Results of such analysis are shown in the next figure.

Figure 22: Comparison of regional competitors vs. Ethiopia

REGIONAL COMPETITORS	Kenya	Tanzania	Egypt	Uganda	Jordan	South Africa
Selling proposition	Classic safari, affordable mass beach	High end safari, beach, & adventure	Ancient history, mass beach	Ecotourism and adventure	Ancient history, high end wellness	Contemporary Africa, nature & scenery
Volume: ('000 arrivals 2013) Ethiopia = 681	1,433	1,063	9,174	1,206	3,945	9,537
Yield: (USD/arrival) Ethiopia = USD 909	617	1,768	659	982	1,043	968
Value Point: Ethiopia = Medium-high	Low-Medium	High	Medium	Medium-high	Medium-High	Medium-high
Factors of competitiveness						
TOURISM RESOURCES						
Unique sites/Iconic experiences						
Wildlife and safari						
Cultural uniqueness/people						
Historical sites and relics						
Scenic beauty and natural features						
City life and conferencing						
People hospitality, peacefulness						
Contemporary man-made attractions						
TOURISM SUPPORT SERVICES						
Hospitality (accommodation, catering)						
Land transport						
Air access						
DEMAND CONDITIONS						
Size/proximity of major markets						
Value for money						
Ease of arrangement and purchase						
Image of health, safety						
INDUSTRY CAPACITY						
Human resources						
Tourism entrepreneurship/innovation						
Tourism institutions and funding						
Colour Key:	Ethiopia at an advantage		Ethiopia Equal		Ethiopia at a disadvantage	

Source: BCI – Ministry of Foreign Affairs, Value Chain Analysis Ethiopia Tourism – Final Report – September 2018, https://www.cbi.eu/sites/default/files/2018_vca_ethiopia_tourism.pdf

The competitors' analysis synthesized in the next figure highlights where, according to the study, Ethiopia was at an advantage or disadvantage to the competing countries and results are very interesting and listed below:

1. In terms of unique, iconic sites to visit, i.e. places declared as UNESCO World Heritage Sites, Ethiopia is on par with Egypt, Tanzania and South Africa and is better placed than Jordan, Kenya and Uganda.

2. Ethiopia's rich cultural diversity, ancient cultural practices and its unique cultural character that spans both the Arabic and African world provides it with a distinct advantage over all other competitors.
3. Similarly, the outstanding hospitality, friendliness and peacefulness of the people is a distinguishing feature that sets the destination apart from all other competitors.
4. Ethiopia is only exceeded by Egypt when it comes to historical sites and relics. It is on par with Jordan and more attractive than other Eastern and Southern African destinations in this regard.
5. Concerning scenic beauty and natural features Ethiopia outperforms all regional competitors except South Africa.
6. In terms of tourism support services and demand conditions Ethiopia's main competitive advantages are its excellent air links and value-for-money, two major advantages.
7. Ethiopia is at a disadvantage concerning wildlife and safari, city life and conferencing and contemporary man-made attractions.
8. Factors that constrain the country's tourism competitiveness are limited hospitality facilities, land transport limitations, difficulty of planning and booking travel and most importantly the limited human resources and institutional capacity to operate, develop and promote tourism.
9. While image barriers related to personal health and safety are real, such perceived risks are even more relevant to competitors such as Kenya and Egypt and are of equal concern in Uganda, Jordan and South Africa.

As illustrated by the previous points, Ethiopia enjoys a lot of positive elements in comparison with other countries in terms of attractiveness, UNESCO and historical sites, and scenic beauty. However, the country emerged as lagging behind in terms of tourism and hospitality facilities, and transport infrastructure. Finally, safety under many respects represents a potential issue for international visitors.

3.3.7.4 Ethiopia transportation infrastructure and tourism development

Transport infrastructure is of essential importance to tourism development. If Ethiopia wants to overcome its weak positioning on the international market and start attracting growing flows of travellers, it has to invest significantly in improving its transport infrastructure at all levels and its hospitality facilities across the country.

There are already many investments projects in progress within the country. It is important to highlight the following points in relation to the development of transport infrastructure and the national tourism industry.

Air transport brings inbound flows of international tourists to Ethiopia but also allows them travel quickly to far destinations across the vast national territory. There is a large network of 23 airports and a number of airstrips in Ethiopia that are used for air travel for tourism purposes. However, for some destinations, scheduled frequency of travel is limited, and this may be a weakness in terms of attractivity of some distant destinations. In addition, the fact that Ethiopian Airlines is the de facto monopolist makes air traveling not as much affordable as in other markets where there is more choice and also low-cost airlines operate. It has to be mentioned the fact that currently Ethiopian Airlines is the only airline that has resisted well to Covid-19 induced pandemic. Thanks to its extensive international

network the carrier can bring to Addis Ababa international airport large flows of international passengers providing positive contribution to the inflow of potential touristic demand. One area of potential development for air transport would be that of charter flights from abroad, also operated by carriers other than Ethiopian Airlines, directly to the touristic destination without stopping in Addis Ababa. This may require the upgrade of some airport to international traffic, but if potential demand is large enough it might be worth considering as a future development area to attract more tourists from abroad. Apart from the upgrading of the Addis Ababa international airport that has recently been provided of a new state of the art passenger terminal, investments to improve and upgrade facilities at regional level are needed. This would create better conditions for tourists and travellers who need to use air transport in Ethiopia, especially since most of air travel to domestic destinations has to go through the hub of Addis Ababa international airport.

Rail transport the most recent addition to the transport infrastructure of Ethiopia is a modern railway system that is being built across the main corridors in the country. In addition a urban light rail line has been built in the capital Addis Ababa, the LTR. Long distance rail transport, although primarily planned for freight transportation,

offers passenger services too and will provide benefits for tourism development. Especially for domestic travellers who need an affordable yet reliable transport offer within the country. The railway also serves the international corridor to Djibouti with passenger trains already being operated along the line. In addition, the two railway lines under construction (Awash-Weldiya and Weldiya-Mekelle) could be other catalysts of native tourism development in the country. Given the long distances from Addis Ababa to some touristic destinations that have the railway line in their area of proximity, a field of investigation would be that for the development of night rail and/or train cruises services. Night rail services can be an alternative to air or road travel to reach far destinations both for domestic and international travellers who need a reliable and affordable service. The Addis Ababa-Djibouti line would be ideal in this sense, and already some trains are running at night. The service could be reinforced in the future. Train cruises is a niche service intended for a high-profile target of international touristic demand. These trains use superior sleeping rolling stock, restaurant coaches and provide personalized care for visiting some scenic and beautiful parts of a territory enjoying a high-level service quality. This kind of rail services, such as the famous Rovos Rail in South Africa or the Orient Express, are already available on the market in some countries across the world in Africa, Europe, Asia, South America, Japan, etc. An area where rail transport and air travel are in direct connection for intermodal passenger mobility is that of airport links. In most of the largest metropolitan areas around the world there is a rail service connecting the city centre to the local airport. Often also long-distance rail services stop at the main international airports. This an area of potential development that would be of particular benefit for tourism in Ethiopia. The possibility of linking the current Addis Ababa Bole international airport to the city centre via LTR services would provide an additional level of service to help local mobility in highly congested Addis Ababa. In addition, looking to the next years, if the announced new international airport will be developed, the presence of a railway line connecting the new air infrastructure to the capital city and possibly to other towns would provide significant benefits for mobility in general and for tourism in particular.

Road transport is among the most basic forms of mobility. In Ethiopia road infrastructure is undergoing a process of upgrading and redesign and the network is of some 130,000 km. The

country has a very large territory with a growing population that needs improved connectivity at local level and for long distance road travel. Tourism relies heavily on a good road network and the provision of people transport services at different levels. Both domestic and international travellers need road access to touristic areas they intend to visit, especially for the so called "last mile" to reach their final destination. From the touristic point of view, the presence of a road infrastructure is a precondition given for granted by operators and travellers. What has high importance is the availability of road transport services that offer easy access to the many touristic sites in the country. This both for domestic and international travellers since both segment of demand may need to use road services at some point of their journey. A difference exists in the type of transport offer. Local/regional transport in general is provided by public transport authorities with a range of scheduled services that are aimed at the local population first, and at travellers as second priority. Private operators often complement the offer at local level with taxi, limousine and minibus services that are more flexible and provide higher satisfaction tourists' needs. Long distance transport also is very important for tourism. Especially in a vast country such as Ethiopia. Here there are already some services departing from Addis Ababa but they do not compare well to those provided in developed countries. Services such as Greyhound from US, Flixbus from Europe and so forth would represent a benchmark to look at for introducing a higher quality long distance passenger road service for tourists and for local people who need to travel but cannot afford more expensive alternatives. This is a typical area of development for private operators who see a business opportunity in serving local and international travel demand. It would be advisable to facilitate the development of such activities in order to create a modern offering long distance road transport services covering those areas of the country that may be attractive for tourism purposes.

Water transport Ethiopia is home to over 20 lakes, most of which are a result of the Great African Rift Valley which extends from Jordan all the way down to Mozambique in Southern Africa. The lakes are concentrated in Amhara and Tigray regions in the North part of the country and in the Rift Valley. Lakes and rivers represent important touristic attractions and there are already tours for visitors interested in lakes, nature, and heritage. Since these are some of the most valuable touristic assets of Ethiopia, it is

important not to overlook them and have in place an offering of water transport services that can satisfy tourists' needs as well as those of local residents' who need to cross the lakes for daily life matters. Water transport for tourism purposes is often provided by private operators since public water transport is generally limited and uses larger ships than those needed by small groups of people. Given the total tourist numbers in Ethiopia in recent years, water tourism currently represents a limited segment of demand. However, the growing interest in wildlife and nature related tours on the international market may generate increasing demand flows for the future that can represent one of the growth opportunities for the Ethiopian tourism industry. In such context it would be good for the government to provide support for local business development in order to grow the number of operators active in water transport services for tourism and create more local work opportunities.

Transport infrastructure and transport services for tourism will need continuous upgrading over time since demand evolves and brings new needs. The government and regional authorities should collaborate among themselves and with the private sector to make tourism development a success story for Ethiopia in the future.

In addition to transport related actions, Ethiopia needs to solid long term tourism strategic plan that will help the country move forward in a focused way to gain a good and more attractive positioning on the international market. At the same time, a specific effort is needed for domestic tourism demand to develop and grow over time into a solid segment of the tourism industry. In this context, a critical area is organizing the online presence of the local tourism industry, public and private, by creating a reliable and updated internet-based network for the Ethiopian tourism sector to find info, book online and foster collaboration. Investments in education and training are needed for tourism industry in general and for hospitality providing international standard levels to students in order to align skill and competence to the highest requirements of the international industry that is coming to invest in the country. Good internet access is a basic condition nowadays and it should also be used in tourism educational programs. Finally, it would be important to stimulate cooperation among the different sectors of the country's tourism industry such as hotels, travel agents, restaurants to improve and upgrade their offering across the whole country, not only for the more popular destinations.

3.4 INSTITUTIONAL CAPACITY BUILDING

3.4.1 Introduction

One of the objectives of the Ethiopian Transport Master Plan study is "To enhance the capacity of Ministry of Transport of the FDRE and other concerned agencies/institutions on the various transport planning tools and techniques, especially those employing new technology, through training workshops."

Based on the above objective, a review of literature, policies, strategies, legal frameworks and similar studies are conducted; Primary and Secondary data on human resource and capacity building have been collected through self-administered interviews and questionnaires from the Ministry of Transport and Authorities/Enterprises acting in the sector. The field survey is dealt in two parts. The first part is the assessment of existing human resource situation in each institution and in general in the transport sector and the second part on the Capacity building efforts made by each institution and in general in the sector.

The collected data have been organized, analysed and gaps identified. The assessment work brings to the proposals designed to fill the main gaps. They are presented at the end of this part of the report.

Objective and Scope of the Assessment

The main objectives and scope of this assessment are to:

- Analyse the existing situations of human resource status in each institution and in general in the sector
- Analyse the capacity building situations of each institution/enterprise and in general in the sector
- Identify gaps that exist and propose possible solutions

Conceptual Framework of Capacity Building

Capacity building is by which individuals, groups, organizations and societies increase their abilities to perform functions, solve problems and achieve objectives to understand and deal with their

development needs in a broader context and in a sustainable manner (UNDP,1997). According to United Nations Education Science and Culture Organization - International Institute of Capacity Building In Africa (UNESCO-IIBA) there are at least three levels of capacity in a given social system context. These are: the Individual, Organizational and Environmental levels. The feature of capacity at each level is described hereunder.

Capacity at the Individual level

Capacity at the individual level is the fundamental level of capacity. It becomes the foundation for organizational Capacity and it refers to the will and the ability of an individual to set objectives and to achieve them using ones' knowledge, skills value, attitude, health awareness etc....(JICA,2004) It can be developed through various ways such as formal and/or, non-formal education, training, on -the job-training, independent reading etc....

According to the world human capital report (2017) human capital development is defined as formal education of the next-generation workforce and continued up skilling and re-skilling of the current workforce.

Capacity at the organization level

Capacity at the organizational level determines how individual capacities are utilized and strengthened. It refers to anything that will influence an organizations' performance, and includes:

- Human Resources (capacity of individuals in an organization)
- Physical resources (Facilities, materials, equipment etc..)
- Intellectual resources (organizational strategic planning, management, business know-how, production technology, program management, process management, eg, problem solving skills, decision making process, communication etc...)
- Organizational culture and
- Management leadership (JICA, 2004).

Capacity at the Environment level

Capacity at the environment level refers to the environment and conditions necessary for demonstrating capacity at the individual and organizational level. This includes systems and frameworks necessary for the formation/implementation policies and strategies beyond an individual organization. Elements on which capacity is based at the environment level include:

- Formal institutions (laws, policies, decrees, Ordinances, membership rules, etc.)
- Informal institutions (customs, cultures, normes, etc.)
- Social capital social infrastructure and
- Capacities of individuals and organizations under the environment (JICA, 2004)

3.4.2 Field Assessment of Human Resources in Sectoral Institutions and Enterprises

The Capacity building situations assessment covered the following federal transport sector institutions and Enterprises: Ministry of Transport and Logistics (MoTL), Ethiopian Road Administration (ERA), the former Federal Transport Authority (FTA), Ethiopian Civil Aviation Authority (ECAA), Ethiopian Maritimes Affairs Authority (EMAA) Insurance Fund Administration Agency (IFAA) the former Road Fund Office (RFO) Ethiopian Railway Corporation (ERC), Ethiopian Airlines (EAL), Ethiopian Shipping and Logistic Service Enterprise (ESLSE), Ethiop-Djibouti Standard Gauge Railway Share Company (EDR), Public Service Employees Transport Service Enterprise (PSETSE) and Ethiopian Toll Road Enterprise (ETRE).

After the assessment findings and conclusions, recommendations are provided based on the data analysed.

Human Resource status Assessment

Human resource/human capital is vital resource for any organization to achieve its objectives. So, The Ministry of Transport and institutions/agencies under its supervision should have necessary human resource both in number and qualification. In this regard, the human resource of the MoTL and other transport institutions/agencies human resource data is collected from 13 federal transport institutions and analysed in various dimensions as follows.

Table 24: Federal Transport institutions Human Resource by Level of education

Level of Education	Transport Sector Institutions and agencies/enterprise												
	MoTL	FTA	ERA	ECAA	EMAA	RFO	IFAA	ESLSE	EAL	ERC	EDR	PSETS	Total*
10th/12th & below.	23	76	2993	98	8	5	18	862	3080	17	13	534	7718
TVET comp.	26	125	1378	108	12	8	9	583	7896	35	8	325	10508
BA/BSC	85	370	1365	194	34	23	65	876	4901	172	28	114	8205
MA/MSC	27	36		29	11	4	11	176	353	54	17	20	734
Phd	1		----	1	1	--	-	---	1	1	---	---	5
G/Total	162	607	5736	430	46	40	103	2497	16033	280	66	993	27,170

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

Table 25: Federal Transport institutions by Gender

Institutions (*)	Gender		
	Male	Female	Total
MOTL	106	56	162
FTA	400	207	607
ECAA	460	112	572
EMAA	46	26	72
IFAA	57	46	103
RFO	26	13	39
ERC	185	108	294
EDR	40	23	63
ERA	8715	2175	10,890
ETRE	513	357	870
PSTSE	789	129	815
EAL	9752	6281	16033
ESLSE	2458	724	3181
G/Total	23498	9688	33,186

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table of the 12 federal Transport institutions human resource data by gender distribution indicated, the MoTL staff is composed of 53% male and 47% female

employees, this is fairly distributed but in the transport sector in general, male is 67% and female are 34%. So, the reason for female staff being lower than the male shall be identified and necessary measures be taken.

Table 26: Federal Transport Institutions by Education and Gender

Institutions*	Level of Education and Gender									
	10th/12 th & below		TEVET/Dip comp.		BA/Bsc		MA/MSc & above		Total	
	M	F	M	F	M	F	M	F	M	F
MoTL	16	7	7	19	63	22	20	8	106	56
FTA	48	28	72	53	250	120	30	6	400	207
IFAA	6	3	1	3	22	21	6	1	35	28
EMAA	6	8	2	10	27	7	11	1	46	26
RFO	5	--		6	17	6	4	1	26	13
ERC	8	9	22	13	108	68	47	8	185	98
EDR	8	5	4	4	13	12	15	2	40	23
PSTSE	508	46	198	108	66	40	17	5	789	129
EAL	1960	1120	4440	3256	3100	1803	252	102	9752	6281
ESLSE*	682	117	373	181	519	307	127	45	1701	650
Total	3244	1343	5119	3653	4185	2406	529	179	13,080	7,711
G/Total		4587		8772		6591		708		20,791

*ERA 5736 permanent and 5120 contract staff and 870 ETRE staff is not included in this table. HR data not categorized by gender

**ESLSE 537 employees are not included in this table since the data is not categorized by education level

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above indicated, in all the ten Federal transport institutions the number male staff are the majority both in number and in level of education than female staff. In general, 67% are male and 33% female.

The next human resource assessment is the status of existing staff by Directorate/ filled and vacant positions in each institution. This to assess how much the planning and staffing human resources activities are done in each institution.

Table 27: MoTL Number of Staff by Directorate and vacant positions

List of Department /Directorate	No. Staff	Vacant positions
Airplane Accident Investigation Bureau	5	-
Aviation Infrastructure Directorate	5	3
Communication Directorate	7	4
Environmental and Climate Change Directorate	8	1
Entices and Anti-Corruption Directorate	2	1
Human Resources Management & Development directorate	11	5
Information Communication Technology Directorate	7	5
Internal Audit Directorate	5	4
Legal Service Directorate	3	5
Maritime and logistics service Co-ordination Directorate	9	5
Minister Office	6	6
National Road Safety Council Office	6	4
Plan, Budget Preparation and Monitoring Directorate	7	1
Procurement and Finance Directorate	11	4
Property Administration and General service Directorate	20	6
Railway Supervision Regulatory Directorate	6	7
Road Transport Service Inspection and Regulatory Directorate	7	5
Sectorial & Regional affairs Coordination Directorate	2	1
State Minister	12	8
Transport Infrastructure Monitoring and Inspection Directorate	6	2
Transport Policy Studies & Standardization Directorate	7	2
Transport Sector Reform and Good Governance Affairs Team	3	1
Women, Children and youth Affairs Directorate	8	6
Total	157	75

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above shows, from the total number of (157 occupied +75 vacant) 232 positions only 66.7% are filled and 32.3% are vacant. This implies that the Ministry is understaffed and it could not be able to accomplish its tasks as planned. So, it needs to more professionals in most of the its' Directorates. The recent redesign

of MoTL, now MoTL, coming from the issuing of the Proclamation "Definition of Power and Duties of the Executive Organs of the FDRE", has activated a total reorganization of the Ministry, and this, hopefully, can allow to have a higher coverage of the vacant positions that will result by the new organization design of MoTL.

Table 28: ERA Human Resource by Directorate

Directorates	Permanent		Permanent Total	Contract		Contract Total	Grand Total
	F	M		F	M		
Director General	6	6	12				12
Ethics & Customer Service Mgmt. Directorate	7	3	10				10
Internal Audit Directorate	8	12	20				20
Office of Director General, DDG	5	4	9				9
Communication Affairs Directorate	11	17	28		1	1	29
Legal Affairs Directorate	8	17	25				25
Performance, Quality & System Mgmt. Directorate	13	16	29				29
Planning and Program Mgt Directorate	18	28	46	1		1	47
Women & Youth Affairs Directorate	8	7	15				15
Corporate Services DDG	4	6	10				10
Alemgena Engineering & Mgt Training Center	65	117	182		1	1	183
Change Mgmt. & Institutional Development Directorate	8	7	15				15
Financial Management Directorate	79	27	106	1	6	7	113
Ginchi Labor Based Technology Training Center	95	112	207				207
Goods Procurement and Facility Mgt Directorate	40	65	105		11	11	116
Human Resource Development & Mgmt. Directorate	38	14	52	1	1	2	54
ICT Service Directorate	10	15	25				25

Directorates	Permanent		Permanent Total	Contract		Contract Total	Grand Total
	F	M		F	M		
Sebeta Alebeta				21	24	45	45
Ginchi Elfata				208	222	430	430
Construction Projects Management DDG	4	5	9				9
Central Region Construction Projects Management Directorate	21	50	71				71
Eastern Region Construction Projects Management Directorate	23	48	71				71
North Region Construction Projects Management Directorate	20	73	93	1		1	94
Southern Region Construction Projects Management Directorate	12	57	69				69
Western Region Construction Projects Management Directorate	17	69	86				86
Environmental, Social & Occupational Safety Mgmt. Directorate	7	32	39				39
Express-Way & Special Projects Mgmt. Directorate	15	36	51				51
Project Development, DDG	4	4	8				8
Design Management Directorate	19	47	66				66
Engineering Procurement Directorate	32	32	64				64
Road Research Center	20	65	85		1	1	86
RoW Management Directorate	6	33	39				39
Road Asset Management DDG	4	6	10				10
Adigrat Road Network Management Branch Directorate	18	49	67	1		1	68
Alemgena Road Network Management Branch Directorate	47	95	142	1	1	2	144
Central Equipment Maintenance and Mgt Directorate	37	90	127	13	14	27	154
Central Equipment Maintenance and Mgt Directorate	1		1				1
Combolcha Road Network Management Branch Directorate	22	52	74		3	3	77
D/Markos Road Network Management Branch Directorate	18	47	65				65
Dire Dawa Road Network Management Branch Directorate	16	56	72		1	1	73
Gonder Road Network Management Branch Directorate	24	52	76		6	6	82
Jimma Road Network Management Branch Directorate	21	53	74				74
Nekemte Road Network Management Branch Directorate	17	39	56				56
Shashemene Road Network Management Branch Directorate	14	41	55				55
Sodo Road Network Management Branch Directorate	7	31	38				38
Adigrat Road Maintenance District	40	205	245	20	195	215	460
Alemgena Road Maintenance District	147	467	614	97	1141	1238	1852
Combolcha Road Maintenance District	48	230	278	55	579	634	912
Debreworkos Road Maintenance District	35	194	229	38	285	323	552
Diredawa Road Maintenance District	46	188	234	27	283	310	544
Gonder Road Maintenance District	112	232	344	67	361	428	772
Jimma Road Maintenance District	40	271	311	47	496	543	854
Nekemet Road Maintenance District	26	257	283	26	199	225	508
Shashemene Road Maintenance District	48	288	336	37	280	317	653
Sodo Road Maintenance District	19	231	250	24	312	336	586
Road Asset Mgt Coordination D/D	13	19	32				32
Road Asset System Management Directorate	14	30	44				44
Road Maintenance Directorate	29	37	66	3	8	11	77
Grand Total	1486	4284	5770	689	4431	5120	10890

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above, the HR status of ERA indicates 47% of its workforce is contract and 53% are permanent this implies that the Authority's' functions are a mix of permanent and temporary (project) type, where contract employees are mostly required for projects. On the other hand, Female employees are around 20% of the workforce which is very narrow in gender composition in a country (Ethiopia) where

the gender composition is nearly 49% female and 51% male. So, large variation should be given due attention to narrow the gap.

Table 29: ECAA Human Resource by Directorate and vacant positions*

Vacant position by department/directorate	
Directorate	Number
General Director Office	3
Communication Affairs' Directorate	2
State safety program administration & internal safety oversight audit directorate	3
Aviation regulation deputy director general office	4
Airworthiness & aircraft registration certification directorate	8
PELOPS Directorate	22
Airworthiness engineering directorate	3
Aerodrome safety standard directorate	3
Air navigation regulation directorate	2
Economic regulation & strategic management directorate	2
Air navigation deputy director general office	2
Aeronautical information management directorate	14
Air space management directorate	2
Air traffic management directorate	15
Communication, navigation surveillance engineering directorate	7
Internal audit directorate	3
Corporate resource management director general	1
Civil Engineering management directorate	7
Finance directorate	4
Human resource administration & development directorate	2
Civil aviation academy directorate	10
Aviation clinic	6
Procurement & property administration directorate	5
Transport & vehicle maintenance directorate	5
Legal service directorate	1
Information communication technology directorate	1
Grand Total	467

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table shows above, it is only the vacant positions that are listed against each directorate; the existing staff is given in total as 572 by the HR Directorate in their response. The vacant position is 49% of the total 1039 positions

(572+467). It seems that the Authority is understaffed however, the HR Directorate explained that this is due to the newly approved organizational structure whereas some regional offices are not yet opened.

Table 30: RFO HR by Directorate and vacant positions

List of Department/Directorate	Existing Staff	Vacant position
Main Executive Director	5	3
Technical & Plan/P/m & Evaluation Directorate	10	7
Finance Directorate	5	4
Audit Directorate	3	2
Human resource, Procurement, Property & General service Directorate	14	9
Communication Affairs Directorate	2	1
Total	39	25

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above indicates vacant positions of the office are 39% whereas the occupied positions are 61%. Hence, the Office is

understaffed to fulfil its duties and responsibilities. Especially, the technical Directorate is 41% understaffed. So, it needs attention.

Table 31: IFAA Number of Existing staff and Vacant positions by department/Directorate

List of Department/Directorate	Total appr.	Existing staff	Vacancy position
General Directorate	6	3	3
Deputy general Directorate	4	3	1
Human Resource Directorate	13	7	6
Finance Directorate	10	7	4
Procurement Property and general Service A/Directorate	26	15	11
Operation Directorate	18	11	7

Planning and Information Technology Directorate	13	8	5
Communication Directorate	7	3	4
Legal Service Directorate	5	1	4
Reform and Good Governance Directorate	7	-	7
Women Children and youth affairs Directorate	8	5	3
Audit service Directorate	3	2	1
TOTAL	120	65	55

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

Table 32: IFAA Number of Existing staff and Vacant positions by department/Branch offices

List of Department./Directorate	Total approved	Nr of Existing staff	vacancy position
Southern Region	12	9	3
DireDawa	12	5	7
Amhara	12	8	4
Tigray	12	6	6
Oromia	12	4	8
Somali/Gigiga	11	1	10
Afar	11	5	6
Benshangul	11	6	5
Addis Ababa	12	1	11
TOTAL	105	45	60

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above revealed that the IFAA, Head Office is working with 54% occupied positions and 46% vacant positions from the total 120 positions approved. The regional offices in general are working with 43% staffed positions

and 57% vacant positions. On the average the Agency is working with 51.5% vacant positions. Hence, the reason for most of its positions to be vacant should be identified and addressed.

Table 33: ESLSE employees by Directorate/Branches

Location	Permanent Employees			Contract Employees			Grand Total	
	Male	Female	Total	Male	Female	Total		
Head Office	347	309	656	39	32	71	727	
Seagoing	Ethiopian	431	0	431	4	0	4	435
	Expatriate	0	0	0	0	0	0	0
Djibouti	Ethiopian	30	1	31	0	0	0	177
	Expatriate	77	29	106	39	1	40	
Modjo	340	103	443	59	7	66	509	
Babugaya MLA	23	12	35	0	0	0	35	
Gelan	31	21	52	8	1	9	61	
Semera	33	8	41	7	1	8	49	
Mekele	23	11	34	20	2	22	56	
Kombolecha	27	7	34	21	0	21	55	
Hawassa	6	4	10	1	0	1	11	
Diredawa	16	14	30	17	0	17	47	
Kaliti Port and Terminal	140	61	201	10	0	10	211	
Kaliti Inland Transport	713	89	802	25	0	25	827	
Woreta	25	10	35	9	1	10	45	
Total	2262	679	2941	259	45	304	3245	

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table clearly indicates, the Enterprise is staffed with local and international staff, since its operation is both locally and internationally, and it has 177 expatriates (5.5%) from the total 3245 staff both at head office and Branches. In the case of gender compositions, the female employees are 721 (22.2%) while male employees are 77.8 % which is a large gap. The reason for this gap should be identified and addressed to narrow the difference.

Table 34: ERC Number of Existing Staff and Vacant Positions by Department/Directorate

List of Department /Directorate	Existing Staff	Vacant positions
CEO	7	4
Rail Network Division	85	337
Rail Transport Division	19	107
Railway Academy	10	63
Business Development and strategies Division	16	87
Finance and Investment Division	22	65
Human Resource Development Division	57	114
Legal Service Director	8	17
Communications Director	11	14
Internal Audit Service Director	9	19
Ethics Service Director	2	6
Railway Safety Service Director	5	17
Total	242	831

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above indicated, 76% positions are vacant and the corporation is working by less than 25% (242) staff from the 1072 approved positions. Particularly, 5 key operational directorates listed above (Rail Network Division, Rail Transport Division, Railway Academy,

Business Development and strategies Division and Railway Safety Service Director) are understaffed by 76.2%, 85%, 86%, 84.4% and 77% respectively. The reason shall be identified and addressed.

Table 35: EDR Number of existing Staff and Vacant Positions by Department/Directorate

List of Department/Directorate	Existing Staff	Vacant positions
General director office	5	
Operation	6	
Finances	9	
Human Resource	23	
Safety	5	
legal	3	
Audit	4	
Technical	6	
Planning	2	
Total	63	

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the table above shows there are no vacant positions indicated. This can be explained with the existence of a management contract which

temporarily gives role to foreign managers, that will be replaced at the end of the contract.

Table 36: EAL Number of Existing Staff and Vacant Positions by Department/Directorate

List of Department /Directorate	Number Existing Staff	Vacant positions
ADD HUB Ground Services	2157	
ADD Sales	121	
CCO Office	8	
COO Office	5	
ET Aviation Academy	191	
ET Cargo Services & Logistics	760	
ET Express and Regional Airports	175	
ET Holiday, Digital/GCC Sales	825	
ET International Services	590	
ET MRO Services	2904	
Ethiopian Airports	1222	
Flight Operations	1266	
Group Business Devt & Inn Hub	21	
Group CEO Office	5	
Group CFO	501	
Group Customer Svcs	3343	
Group EFM	283	
Group HCM	961	

List of Department /Directorate	Number Existing Staff	Vacant positions
Group Information Technology	270	
Group Internal Audit/Compliance & QMS/SMS and Busses.	55	
Group Legal Counsel & Secretariat	17	
Group Marketing	122	
Group Strategic Plan & Alliances	38	
IOCC	193	
Total	16,033	

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the total number of existing staffing indicated, EAL is fully staffed and there is no vacant position listed. This appear to be the result of a long story of organization development and capacity

accumulation, that gives to EAL a prominent role in the Ethiopian transport landscape, with more than a half of the total number of employees of the institutions and public companies of the sector.

Table 37: PSETSE Number of staff and vacant position by department/directorate

List of Department /Directorate	No. Existing staff	vacant position
General Director	5	0
Logistics and supply director	20	1
maintenance and engineering director	38	25
Deputy General director transport service sector	1	2
office of Gender and social affairs	1	2
Ethical office	1	2
Transport operation director	4	7
Information technology director	3	7
planning marketing and business development director	2	3
Audit service	3	3
Communication director	3	2
HR Administration director	33	13
organization change and good governance director	1	2
corporate Finance	18	4
Resource Allocation Deputy General director	0	3
legal service	0	3
Security service	1	1
East Branch Transport operation	233	52
South Branch Transport operation	216	59
North Branch Transport operation	224	37
West Branch Transport operation	200	12
Total	1007	240

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

Even in the PSETSE the number of vacancies is quite high, with 24% of incidence on the total.

Table 38: Number of Staff by Age distribution

Age group	Federal Transport Institutions										
	MoTL	ERA	EMAA	IFAA	RFO	PSETSE	EAL	ECAA	ERD	ERC	Total
18-25	3	298	3	19	0	98	2012	22	3	4	4541
26-32	56	1094	16	26	6	187	6722	224	17	81	10814
33-40	56	1121	17	33	12	109	3928	180	23	136	2596
41-45	22	941	11	12	9	162	1215		13	40	2431
46-55	18	1305	15	16	8	263	1583	141	6	29	3384
> 55	2	1177	6	4	4	204	573		1	6	1977
Total	162	5736	67	110	39	1022	16033	567	63	291	25743

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

According to the age distribution table above, around 60% of the workforce is between the age of 18 and 32 years, So the sector has a great number of young workforces that could be easily

trainable and would work more than 30 years in the sector.

Table 39: Number of Staff by profession in each Institution

List of Profession	Federal Transport Institutions, agencies and enterprises					
	MoTL	ERA	EMAA	PSETSE	Total	Remarks
Accounting/finance	32	308	9	220	569	
Business Admin/Management	18	811	12	50	891	
Engineering /Civil/MechElec.	5	840	2	5	852	
Economics	6	22	7	12	37	
Computer Science	2	20	1	2	25	
Law	2	34	2	2	40	
Occupational safety &Env,Prot.	-	28	-	-	28	
Marketing/logistics	1		2	3	6	
Transport Planning& mgt.	8		3	--	11	
ICT	3	35	2	-	40	
Rail way technology/Eng,	-		-	3	3	
Statistics	4		3		7	
Mechanics/Auto/Gen Mech.	-		-	68	68	
Trainers	-	48	-	-	48	
Others	71	3331	29	289	3720	
Total	157	5736	72	556	6522	

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the professional distribution of four institutions in the major professions list above

indicated, 49% of the workforce is composed of engineering, finance and business administration professions and the rest are in other professions.

3.4.3 Focus on the training activities

One of the capacity building methods for human resource is training. So the transport sector institutions short and long term staff training

provided between 2017-2019 are assessed as follows.

Table 40: Short & Long Term Training provided for the Staff for 3 years (2017 – 2019)

Name of Institution	Duration of Training and number of trained staff locally and abroad						Grand Total
	Short Term		Long Term		Total		
	Local	Foreign	Local	Foreign	Local	Foreign	
MoTL	70	6	10	13	80	18	98
ECAA	-	-	-	-	-	-	767*
IFAA	185	-	-	-	185	-	185
RFO	16	-	-	-	16	-	16
EDR	-	38	615	34	615	72	687
ERC	28	6	-	4	28	10	38
PSTSE	7642	-	-	-	7642	-	7642
ESLSE	7020	-	195	2	7215	2	7217
EAL	35367	846	1364	38	36731	884	37,615
Total	50328	896	2184	91	52512	987	54266

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As figures in the table above indicated, the sector institutions made very good effort both in local and foreign short- and long-term trainings for their staff. For instance, 93% are short term trainings are provided for the sector staff locally in three years of the total short- and long-term trainings, of which 50.4% of the short-term trainings are provided by EAL The above table clearly revealed that those newly established/reorganized provide more local

trainings for their staff (PSTSE and ESESE) with the exception of EAL.

Even though all the federal transport institutions were asked to provide the capacity building projects they run within 2017-2019 and their capacity plan, only few of them responded. So the following capacity building assessment is limited on those which provided the required data,

Table 41: Capacity plan executed (2017-2019)

Name of institution	Name of project	Period	Budget	Financing entity	Number of Employees involved	Regularly completed
EDR	MC capacity building	2018-2019	30 Million USD	EDR	2098	120 completed till 2019
ERC	EASTRIP Project	5 years	12.85M USD	World bank		On progress

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

As the capacity building table clearly revealed the newly established institutions in the railway sector is investing in capacity building from their

own source and from international financing organization. The projects total outlay is 42.85 million dollars of which 70% is locally and 30 percent international source.

Table 42: Capacity Building Project Planned

Name of institution	Name of the Project	Starting date	Ending date	Budget	Financing entity	No of employees involved
EDR	MC Capacity building	2018	2023	30 Million USD	EDR	1978
ERC	Railway Academy		After 3 years	57 Million USD	China Aid	To be estimated

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

The capacity building planned of the two railway sector Institutions/Enterprises is also composed of internal and foreign financing sources with 35% local and 65% foreign component. As the railway sector is in its infancy stage in Ethiopia, it

is proper to allocate more on capacity building specially on human capital development because human capital development is the most important source of competitive advantage for any production or service provider institution.

3.4.4 Assessment of Federal Transport Institutions

In addition to the assessment made on human resource status and development, the transport sector Institutions overall organizational management situation is assessed in seven major organizational variables/issues. These are **Strategy, Structure, Style of Management, Staff, Skill, Shared value,** and **System**. Under each major variable there are 1-4 questions to be

responded by each institution Human Resource Directorates/Officials. The questionnaire was distributed to 13 Federal transport Institutions' human Resource Officials to get their feedback about the internal organizational Management situation of the institutions. Eight organizations' officials responded to the questionnaire. The responses are analysed as follows.

Table 43: Federal Transport Institutions 7S Organizational Assessment

Organizational Issue questions	Federal Transport institutions/Agencies/Enterprises HR Officials Responses																	
	MoTL		ERA		FTA		ECAA		IFAA		RFO		ERC		EDR		Total	
1.Strategy	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
1.1.Is the organization vision and goal clear to all staff?	X		x		x		X		X			x	x		X		7	1
1.2, Is every staff aware the business focuses when planning the strategy?	X		x		x		X			x		x		x	X		5	3
1.3. Are all the stakeholders who should be part of the process involved?	X		x		x		x			x		x		x	X		5	3
2.Structure																		
2.1. Does the current structure enable quick decision making, flow of information, service delivery and ensure equal distribution of work?	X		x		x		X			x		x	x			x	5	3
2.2.Is there link between the structure and the strategy?	X		x			x	X		X			x		x	X		5	3
2.3.Are all duties and responsibilities clearly defined?	X		x		x		X		X			x		x	X		6	2
2.4..Are governance structures in place to ensure key stakeholders-staff, other Ministries, service users in determining how the organization should deliver its services?	X		x		x		X			x		x		x		x	4	4
3.Staff																		
3.1.Are they effectively utilized and are there enough	X		x		x			x		x		x		x		x	3	5

Organizational Issue questions	Federal Transport Institutions/Agencies/Enterprises HR Officials Responses															
	MoT L	ERA	FTA	ECAA	IFAA	RFO	ERC	EDR	Total							
people?																
3.2..Do employees feel that they contribute important service?	X	x	x	X	x	x	x	X	4	4						
3.3.Does the organization encourage the right behaviour?	X	x	x	X	X	x	x	X	5	3						
4.Skill																
4.1.Are staff fully competent and do they have high morale?		X	X	x	X	x	x	x	2	6						
4.2.Are jobs designed to ensure the right skills are utilized in the right place?	X	x	x	X	X	x	x	X	7	1						
4.3.Are there enough opportunities to grow and develop?	X	x	x	x	x	x	x	X	4	4						
5.Style																
5.1.Is the leadership style conducive to high performance, and high service –oriented environment?	X	x	x	X	X	x	x	X	7	1						
5.2.Are there efforts to make the work environment conducive to effective service?	X	x	x	X	X	x	x	X	7	1						
5.3.Is information shared and communicated regularly?	X	x	x	X	X	x	x	x	6	2						
6.Shared Values																
6.1.Are rules, values, customs and principles that guidelines of the organization behaviour clear and transparent?	X	x	x	x	x	x	x	x	3	5						
6.2.Are core professional values internalized?	X	X	x	x	X	x	x	x	5	3						
7.System																
7.1.Are the human, financial, technological systems effective to support the organization Core objectives?	X	X	x	x	x	x	x	x	3	5						
7.2.Are incentives guided by HR and budgetary policies, and procedures?	X	X	x	X	x	x	x	x	4	4						
Total	19	19	16	4	15	9	11	6	13	16	11	9	97	63		
Percent	95	95	80	20	75	45	55	30	15	85	55	45	60.6	39.4		

Source: Field survey at Transport sector Institutions HR Directorates, 2020/21

The answers to the 7S organizational assessment are analysed as follows. Based on the collected questionnaire from respondents, they are eight HR Officials and the total questions under the seven major elements/variables are 20, hence, the total responses by 8 respondents (8x20) are 160. The response are restricted to **Yes** are or **No**, “Yes” means it is favourable/well done for that particular question, and “No” means it is not favourable/ not well and needs improvement.

By the analysis of the results clearly emerges that Staff, Skills and Systems are the priority areas of intervention. By the way these are among the most important dimensions, so, on average, the situation requires concern and caring.

The assessment results at single organization level shows a situation very much differentiated. It can offer the opportunity of some slight interpretations. It is possible to define some clusters:

- MoTL and ERA, with a percentage of positive responses respectively of 95% and 95%, appear to look at the future in positive terms.
- FTA and ECAA with a percentage of

positive responses respectively of 80% and 75% show some signs of internal frustration for the conditions under which they must operate.

- IFAA and EDR are 45% and 55% with positive responses seem in a situation of a management which is in fight with difficulties.
- ERC and RFO management situation is 15% and 30% of positive answers, show signs of organizational suffering and loss of positive perspectives.

The 7S organizational assessment in general revealed that:

- The staff issue/variable indicated that 50% (12 of 24) responses are “No” meaning half of the staff are not fully utilized, they are not satisfied in their jobs and even did not believe they are contributing to the well to their organizations and employees affairs handling are not satisfactory,
- The Skill issue/variable is also a serious problem in the sector due to the fact that 46% (11 of 24) the responses are “No”

meaning that in the sector the right skills are not utilized in the right positions, not full competent and do not have opportunities to develop their skills required for their functions.

- The shared value issue/variable is also an area of concern to be addressed since 50% (8 of 16) responses are “No” which implies that the existing human financial and technological system in sector is only

partially applicable and not fully supportive to the core value/objectives of the sector institutions.

- In general, 60.6% are well managed and 39.4% are not well managed in seven key internal variables/ elements: strategic plan, structure, staff, skill, style of management, shared values and the existing system

3.4.5 Main Findings of the field survey

The Capacity building assessment of the federal transport institutions focused on the human resource status by level of education, gender, age, profession, staffing of departments /directorates, and the capacity building efforts made through formal short- and long-term trainings as well as the internal organizational management situation using 7S Organizational Assessment framework.

Based on the data analysis of 13 federal transport institutions human resources, capacity building efforts and their organizational management situation assessment findings are presented hereunder.

- The gender composition of the transport sector institutions human resource is found that 65% are male and 35% female employees.
- Regarding the transport sector employee’s level of education is concerned, 67.8% are TEVT diploma/completed and below, 30.2% BA/Bsc degree holders and the rest MA/MSc degree and above holders.
- The transport sector human resource age group indicated that 60% staffs are below

the age of 33years and the 40% are above, and this authorizes to expect positive development by the generation transition.

- The human resource staffing situation of most of the transport institutions is moderately staffed, however, Insurance Fund Administration, Road Fund Office and, Ethiopian Railway Corporation have 51.5%, 57% and 76% vacant positions respectively from the approved positions.
- The overall transport sector institutions’ human resource short- and long-term training provided in the last three years (2017-2019) is about 54.000, which is a remarkable number if compared with the total staff of around 22.000 employee. This means that on average in the last three years each employee has received more than two training experiences.
- The data analysis in particularly revealed that IFAA and ERD need 55% and 45% improvement in their internal organizational management whereas, ERC and RFO need 85% and 70% improvement respectively.

3.4.6 Further findings from desk assessment

Besides the survey described in 3.4.1 - 3.4.4 it is important to mention the main outcomes of a focused project carried out in 2019 under the IV RSDP and concerning the institutional capacity of RRAs⁵⁹.

The assessment faced many challenges that are summarised as follows⁶⁰.

Legal, Institutional Mandates: Assessment results have shown that in many RRAs, there is

lack of clear understanding/ about what Regulatory and Operational services and its demarcation. The gap/ confusions in putting the legal autonomy mandate and Organizational structure has brought the mergers of multiple and incompatible functions in an agency.

Organizational Structure and System: Working/ operation systems that are following and serving to fulfil the objective, execute the legal mandate and organizational structure are not well established and exercised. Some activities and project plans are not outcome aligned, are not professionally managed starting from the design up to implementation and handover.

⁵⁹ NTU International, Technical Cooperation to Support the Road Sector Development Program for Ethiopia, Institutional Capacity Assessment (ICA) Report, May 2019 and idem, Institutional Organizational Setup and Structure of RRAs Report, March 2020.

⁶⁰ See NTU, 2019.

Coordination & support from ERA and other stake holders: Follow up and coordination from ERA (experience sharing, information/ progress tracking at regional and national level is limited. The loose relationship and weak follow up is reflected in different understanding and confusion about ERA initiated/ national programs (e.g. URRAP), delay/ no response for request for clarification & updates, uncoordinated effort and engagement among different actors

Managerial & Technical capacity: Data about profile of staffs working at different levels have shown that there is lack of technical and managerial skill at the top management level due to the qualification of the person assigned (unrelated field of study, little experience; understaff) which causes mismanagement of professional/ technical staffs and high turnover.

Documentation & Information sharing: Situations in many of the RRAs justifies that there is no system or practice of information tracking and documentation. This problem has caused challenges to get appropriate data for planning, budgeting, as well as designing strategic plans and policies.

Strategic view: Low level of managerial and technical capacity of the strategic team of RRAs is analysed to be the major factor for poor level of understanding and skill to strategize issues and prioritize projects which has been widely seen in number of RRAs.

Budget (Financial Resources: Shortage of resources (budget, equipment...) is the universal chronic challenge of RRAs to run their duties in RAM. Apart from severely low volume of budget allocated to Road projects, delay in disbursement, use of general (undetailed/ none costed) budgeting, inefficient management of resources, limited community initiative & contribution are some of the other constraints seen in relation to resources.

The assessment carried suggested some recommendation on the following issues.

- a) Splitting Regulatory roles from Administration
- b) Business model & public owned institutional setup
- c) Customized/ tailored approach
- d) Shared vision and approach
- e) Adequate resources to Key functional areas

The final outcome of the project was an Institutional Organization Setup and Structure

(IOS)⁶¹ aimed at streamlining the organizational structure of the RRAs while taking into account regional characteristics and development of the regions (i.e. relatively developed and emerging regions).

The new IOS defines three (3) Core Areas, supported with 11 Directorates and 29 Teams as presented in a principal model. Alterations to the principal model were made based on planning capacity, financial strength/revenue streams, access to experienced personnel, availability of contractors and number of projects and programs of the regions. Accordingly, model alterations have been proposed resulting into one model for the developed regions and another for the emerging regions. The emerging regions having less staff as compared to the emerging regions.

The core process areas of the IOS include:

- Planning and Road Asset Management,
- Corporate Services,
- Engineering and Project Management.

The proposals above described are of great importance to tackle with future challenges of the transport system at regional level. Despite the area covered by RRAs does not cover the whole scope of the transport sector planning and administration, a full implementation of the organizational principles and structure suggested should strengthen in a decisive way the ability to manage the road infrastructure.

As stated above, a similar project should be prepared and implemented in the area of the services administration and management, carrying out an assessment of the Transport Bureaus at regional level and issuing suitable guidelines to harmonise and improve the local structure of the transport public administration.

⁶¹ See NTU, 2020.

3.4.7 *An analysis of the modalities and the assistance required to implement the investment and policy reform program.*

It is useful to recall the diagnosis already expressed in occasion of the delivery of task 4 "Consolidated National Master Plan"

All the elements analysed compose a landscape that requires to be interpreted and addressed strategically. The relevant elements to be taken into considerations for a diagnosis are, on the consultant opinion, the following:

- the capacity building is considered a **key strategic tool** in all the compartments of the Transport sector;
- **considerable number of resources has been devoted** during the last years for many capacity building, training and technical assistance initiatives in the sector. In particular, any physical investment effort has a component in it devoted to the capacity building;
- overall, the **transport sector has significantly benefited** of the interventions and has grown in quality and number of professionals;
- **The relevant effort not always has brought corresponding results.** The progresses are more evident in aviation, road administration and railways. In other sectors, where the role of private operators is dominant (freight transport, urban transport) the gap is huge and the expectations are growing faster than the results;
- the capacity building programs that the MoTL is launching in the short run are even **more challenging and relevant in terms of resources**;

- it is evident that most of the initiatives **come out bottom-up**, and there is a clear gap in terms of unitary and organic program **formulation** as well as of **coordination** among the different initiatives;
- the lack of coordination implies **loss of opportunities** in term of synergies and with risk of overlapping and mutual erosion;
- a further **gap is in terms of effectiveness of the intervention**, for reasons either of intervention design or for poor implementation;
- there is **no evidence of evaluation** of the capacity building programs and there is no presence of an homogeneous measurement methodology.

On the Consultant opinion what is needed is a **meta-intervention**, in the sense that the massive doses of capacity building, training for professionals and technical assistance that will be injected in the system must be accompanied by a strategy and a governance system of this type of intervention.

The present contribution of the Consultant is to study and propose actions able to create a management system and the best organization inside the MoTL, to put the Ministry and H.E. the Minister in better condition to:

- exert an effective control and coordination of the many initiatives of capacity building ongoing;
- to define a strategy and a methodology to plan and perform future effective capacity building and training projects.

3.4.8 *The creation of a Management System for the Sector Capacity Building: the CBMS*

In coherence with the diagnosis done, the measures proposed by the Consultant are based on the creation of a Management System for the Sector capacity Building, that can be identified with the acronym CBMS (Capacity Building Management System).

The CBMS is composed on four elements:

- a) the **Organization redesign** of the capacity building/human resources development unit in MoTL, in the Authorities/companies under it and the creation of ad hoc Committees.

- b) **Coordination procedures** between MoTL and the Authorities/Companies of the sector.
- c) an **Evaluation Methodology** for the measurement of the effectiveness of each capacity building/training intervention on a homogeneous base.
- d) an **Implementation Strategy** that will focus on early wins, intermediate objectives and final achievements through a definition of phases of intervention.

e) In the following paragraphs each of the

elements will be defined and described.

3.4.9 The Organization Redesign

At the present the ongoing projects of capacity building are designed and executed autonomously by the Authorities and public companies of the transport sector. The Ministry limits its role to the capacity building organized for the ministerial staff.

This modality, as said in the diagnosis, is not the optimal one, and a new modality, centered on the CBMS, requires a pivotal role by the MoTL.

The idea behind the organization redesign is that the Ministry has the interest to define for itself a new role in the end-to-end capacity building process. In particular, the initiative to start a capacity building project remains in the hands of the Authorities/Companies, but any project involving a capacity building must be designed and executed in accordance to standards defined centrally by MoTL, that issues procedures able to guarantee its role of coordination and control, finalized to maximize the positive effects of the capacity building programs.

The organization redesign is centred on:

- 1) the creation of a new unit, behind the Transport Sector Capacity Building Directorate of the MoTL, that can be denominated **“Capacity Building Programs Coordination Unit”**. This Unit has the scope to re-launch and boost the role of the Transport Sector Capacity Building Directorate, with a specific focus on the standard setting and coordination of the new programs in the capacity building domains.
- 2) In parallel to the creation of this new central unit, each Authority or Company under the

coordination of the MoTL is supposed to receive a guideline in order to define a unit in the Human resources department denominated **“Capacity Building programs Supervision Unit”**, that will have supervising role in the capacity building programs activated in the Authority/Company and that will be the interface on the ground of the Unit in the MoTL. These units will remain hierarchically dependent by the HR Director of the Authority/Company, but will be at the same time functionally dependent from the responsible of the **“Capacity Building Programs Coordination Unit”** in MoTL.

- 3) the creation, in occasion of the activation of any Capacity Building program in each Authority or Company under the coordination of the MoTL, of a **“Capacity Building Evaluation Committee”**, chaired by the responsible of the **“Capacity Building Programs Coordination Unit”** within MoTL and having as a member the responsible of the **“Capacity Building programs Supervision Unit”** of that Authority/Company, with functions of secretary of the Committee. Other members will be nominated by the Board of the Authority/Company in accordance with the nature of the program and the involved organization Units.

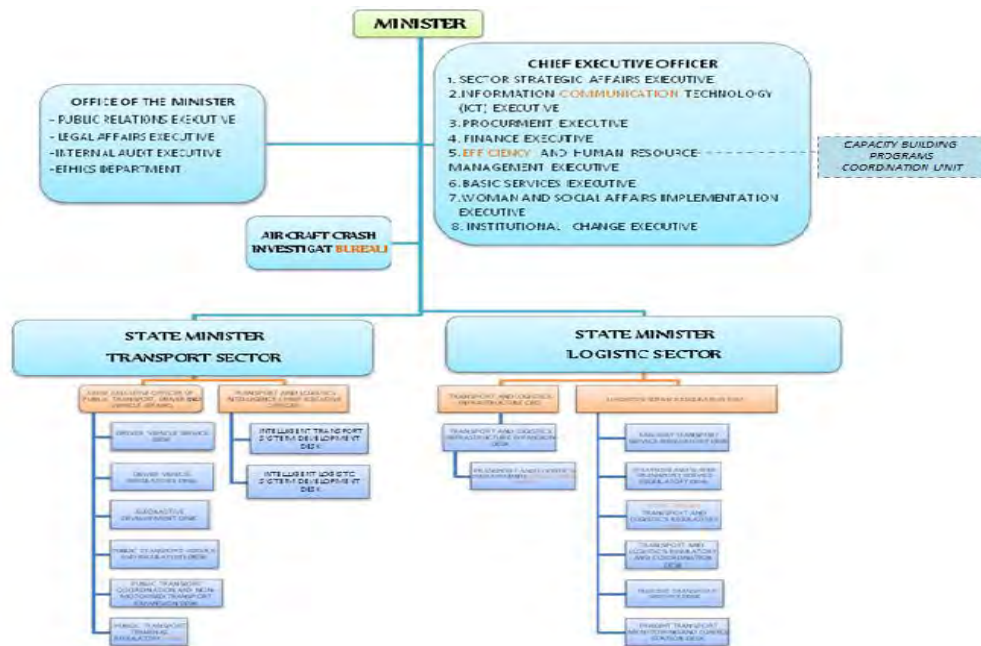
This redesign is not in contrast with the new redefinition of MoTL's powers and duties in case of supervision of transport companies. In fact, the supervision attributed to PEHA is of a financial nature and cannot disregard the role of sectoral guidance that belongs to the MoTL.

3.4.10 The scope of work of the new Units

The Organization Chart behind describes the position of the new unit **“Capacity Building Programs Coordination Unit”** within the organization structure of the MoTL.

Being the Ministry organization under revision, after its transformation as MoTL, the new unit will be depending also in the future organization charts by the Human Resources Development Directorate.

Figure 23: Logical position of the new Unit in the MoTL organogram



The **job description** of the functions of this “Capacity Building Programs Coordination Unit” are the following:

- Endorsing the capacity building programs design of all the Authorities and Companies under the MoTL coordination before the program is approved by the board of the Authority/Company;
- Ensuring an on-going process of organizational improvement through appropriate analyses aimed at identifying organizational needs that result from an external environment that is constantly evolving, and through structural and process actions;
- Defining the quality standards for the design and the implementation of the Capacity building programs;
- Defining the evaluation methods for the measurement of the effectiveness of the Capacity Building programs newly activated;
- Building the project management tools for the monitoring of the ongoing Capacity Building programs, to be shared with the all the Authorities and Companies under the MoTL coordination;
- Building the data-base of the competencies acquired and the licenses/diplomas obtained by the personnel that has been involved in the Capacity Building programs;
- Acting as MoTL representative in the

Boards that manage the Academies and the Training Centers belonging to the institutions under the coordination of MoTL.

The job description of the functions of the “Capacity Building programs Supervision Unit” for each Authority/Company are the following:

- Submit, for its endorsement, the capacity building programs design of the Authority/Company to the “Capacity Building Programs Coordination Unit” of MoTL before the program is approved by the board of the Authority/Company;
- Ensuring an on-going process of organizational improvement through appropriate analyses aimed at identifying organizational needs that result from an external environment that is constantly evolving, and through structural and process actions;
- Implementing the quality standards issued by the “Capacity Building Programs Coordination Unit” of MoTL for the design and the implementation of the Capacity building programs;
- Using the project management tools for the monitoring of the ongoing Capacity Building programs, to be shared with the “Capacity Building Programs Coordination Unit” of MoTL;
- Feeding the data-base of the competencies acquired and the licenses/diplomas obtained by the personnel that has been involved in the

Capacity Building programs;

The job description of the functions of the "Capacity Building Evaluation Committee" established for each Capacity Building program activated by the Authority/Company are the following:

- Applying the evaluation methods, issued by the "Capacity Building Programs Coordination Unit" of MoTL for the measurement of the effectiveness of the Capacity Building programs activated;
- Monitoring the evaluation factors during the Capacity Building program execution,

proposing corrective action if the results are not satisfactory;

- Issuing a Report on the final evaluation of the effectiveness of the Capacity Building program concluded, in accordance with the evaluation factors defined, underlying points of strength and areas of improvement.

The new Units to be established, with their functions and scope will need the issuing of a Directive signed by the Minister of Transport, in order to have a compulsory regime of the procedures and roles.

3.4.11 The Coordination Procedures

Procedure I – PROGRAM DESIGN ENDORSEMENT

Scope: Allow MoTL to maintain an effective control on the capacity building initiatives initiated by the Authorities /Companies under its supervision.

Field of application: The procedure is activated every time the Authorities /Companies under MoTL supervision want to activate a new Capacity Building program

Regulation: Directive n. XX, art. YY

Responsibilities:

- The Responsible of "Capacity Building Programs Coordination Unit" of MoTL
- The Responsible of "**Capacity Building programs Supervision Unit**" of the Authority/Company proponent.

Requirements:

The request of endorsement of the Program design must be done prior of the approval of the program by the Board of the Authority/Company proponent.

The result of the procedure can Be:

- Endorsed;
- To be reviewed according to the comments for a further submission;
- Rejected, with due motivations.

Activities to be carried out by the Unit

Responsible:

- The Responsible of "**Capacity Building programs Supervision Unit**" of the

Authority/Company proponent is the one who activates the procedure by requesting in written form to the **Capacity Building Programs Coordination Unit** the endorsement of the Program.

- The Responsible of "**Capacity Building programs Supervision Unit**" submit a report with full explanation of Purposes, objectives, contents, responsible, population touched and modalities of the Capacity Building program and attaches all the documents that can be useful for its preventive evaluation;
- The Responsible of "**Capacity Building Programs Coordination Unit**" of MoTL examines the request and checks that the evaluation methods for the measurement of the effectiveness of the Capacity Building programs and the other quality standards are met. He draws a Report with the results of its evaluation, duly motivated;
- The Responsible of "**Capacity Building Programs Coordination Unit**" of MoTL transmits its Report to the "Capacity Building programs Supervision Unit" of the Authority/Company proponent, informing of the results the competent State Minister.
- The Responsible of "**Capacity Building programs Supervision Unit**" of the Authority/Company proponent bring the capacity Building Program to the decision of its Board, enclosing the positive endorsement of MoTL. Without it, the Board cannot take final decisions on the Program.

Figure 24: Flowchart of the process - Procedure I – Program Design Endorsement



Procedure II – Quality standards and Evaluation Methods issuing

Scope: Allow MoTL to guarantee the quality the capacity building initiatives initiated by the Authorities /Companies under its supervision through:

- Defining the quality standards for the design and the implementation of the Capacity building programs;
- Defining the evaluation methods for the measurement of the effectiveness of the Capacity Building programs newly activated;

Field of application: The procedure is activated every time the “Capacity Building Programs Coordination Unit” of MoTL needs to set or modify quality standards and/or evaluation methods.

Regulation: Directive n. XX, art. YY

Responsibilities:

- The Responsible of “Capacity Building Programs Coordination Unit” of MoTL

Requirements:

Before issuing the new quality standards or evaluation methods the Responsible of **Capacity Building Programs Coordination Unit** of MoTL will have to consult all the Responsible of “Capacity Building programs Supervision Unit” of the Authorities/Companies and elaborate the feedbacks

Activities to be carried out by the Unit Responsible:

- The Responsible of “**Capacity Building Programs Coordination Unit**” of of MoTL drafts the principles and the quality standards that each “**Capacity Building programs Supervision Unit**” of the Authorities/Companies will have to follow for the design and the implementation of the Capacity building programs to be submitted to the endorsement (see **Procedure I – PROGRAM DESIGN ENDORSEMENT**);
- The Responsible of “**Capacity Building Programs Coordination Unit**” of of MoTL drafts the evaluation methods for the measurement of the effectiveness of the Capacity Building programs newly activated;
- The Responsible of “**Capacity Building Programs Coordination Unit**” of of MoTL, on the basis of the prepared drafts of the quality standards and the evaluation methods, starts the Consultation with the “**Capacity Building Evaluation Committee**”;
- At the end of the Consultation the Responsible of “**Capacity Building Programs Coordination Unit**” of MoTL elaborates the feedback received and issues in final form the documents containing the principles and quality standards and the Evaluation methods.
- Each Responsible of “**Capacity Building programs Supervision Unit**” of the Authorities/Companies will follow the principles and quality standards and the evaluation methods for the measurement of the effectiveness of the Capacity

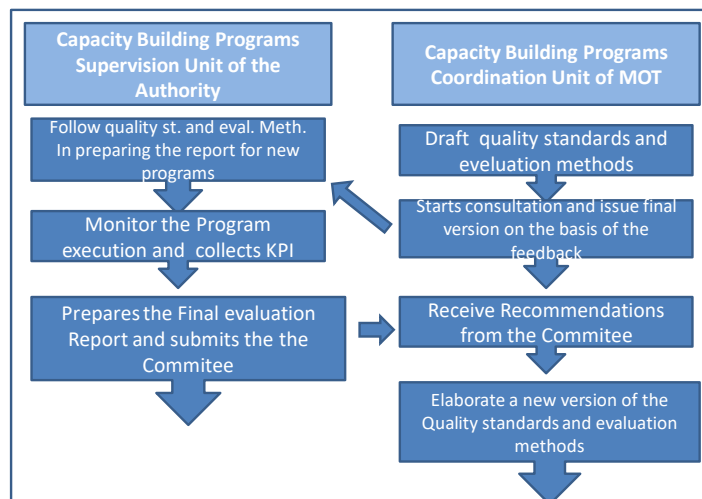
Building programs issued by MoTL in preparing the report of the Capacity Building new program to be submitted to MoTL for endorsement.

- During the execution of each Capacity Building new program, the corresponding Responsible of **“Capacity Building programs Supervision Unit”** of the Authorities/Companies makes the monitoring of the program execution and collect and elaborates the KPI for the final evaluation.
- At the end of the execution of each Capacity Building new program, the corresponding Responsible of **“Capacity Building programs Supervision Unit”** of the Authorities/Companies prepares the **“Final evaluation Report”** on the basis of the declared KPI;
- The **“Capacity Building Evaluation**

Committee” examines and discuss the **“Final evaluation Report”**, implement the **“Final evaluation Report”** with its comments and transmits the Report to the Competent State Minister. If the case, the **“Capacity Building Evaluation Committee”** makes recommendations for the revision of the quality standards and/or of the evaluation methods;

- The Responsible of **“Capacity Building Programs Coordination Unit”**, in case of recommendations for the revision of the quality standards and/or of the evaluation methods done by the **“Capacity Building Evaluation Committee”**, will issue a new version of the documents containing the principles and quality standards and the Evaluation methods.

Figure 25: Flowchart of the process - Procedure II: Quality standards and Evaluation Methods issuing



3.4.12 Evaluation Methodology

The reason to have an evaluation methodology to apply to the ongoing capacity Building programs is to avoid the typical risks of these programs, mainly the insufficient effectiveness of the experience.

The typical elements affecting the effectiveness of a capacity building experience can be summarized as:

- the language and cultural barrier between the trainers, typically foreign, and the trainees;
- the inadequate background of the trainees;
- the contents brought to the attention of the trainees not enough focused or not enough practical;
- a pedagogical process not adequate to

the circumstances;

- practical modalities (logistics, equipment,) not functional to the process;
- an insufficient priority given by the institution and/or by the trainee to the Capacity Building program.

This “risks grid” is the one to be used in the phase of the projecting of the intervention to evaluate its endorsement.

A related topic is the quality standard for training and capacity building activities. In the perspective of standard setting, it risks to be very subjective to set a specific standard for any program it can occur.

The most rational approach to the quality standards is to make reference to internationally

accepted standards, in particular to the ISO (International Standards Organization) standards that are required for the quality certification ISO 9001 for the training centres.

Furthermore, it is necessary to set an evaluation methodology that is homogeneous for all the Capacity Building intervention. This evaluation methodology is based on the Key Performance indicators typical for a capacity Building intervention.

The KPIs that can be enough general to be applied to different Capacity Building projects

should document five matters/dimensions of the intervention:

- Theoretical Training
- Practical training
- Transfer skill
- Technology transfer
- Program Execution

In the following table for each matter, it has been defined a variable and an indicator to be used as KPIs:

Table 44: Key Performance Indicators for CB programs

Area	Matter	Variable	Indicator
Effectiveness of the Capacity Building Program	Theoretical Training	Test results	The number of operational employees that pass the theoretical training tests divided to the total number of tested employees
	Practical training	Test results	The number of operational employees that pass the practical training tests divided to the total number of tested employees
	Transfer skill	Work efficiency	Percentage value of the total number of managers/employees who improved work efficiency by greater than or equal to 10%
	Technology Transfer	Personnel skills	Number of local personnel able to independently operate on IT systems for line management divided to the number of the total personnel supposed to operate on the same systems
	Program Execution	Execution in accordance with the time scheduling	Delays of each scheduled activity (weeks)

Here some specifications about the proposed KPIs:

Theoretical training indicator

Theoretical training indicator refers to the percentage value of the number of operation level trainees passing the theoretical test and the total number of operation level trainees participating in the theoretical test.

Practical training indicator

Practical training indicator refers to the percentage value of the number of operation level trainees passing the practical test and the total number of operation level trainees participating in the practical test.

Skill Transfer Indicator

Skill Transfer Indicator is the percentage value of the total number of managers/employees who improved work efficiency by greater than or equal to 10% divided by the total number of managers/employees who finish training in the same year.

Technology Transfer Indicator

Technology transfer indicator refers to the percentage value of the number of local employees who have the ability to independently operate the IT system and the total number of local employees who should have the ability to independently operate the IT systems.

Program execution Indicator

Program execution Indicator refers to the execution in accordance to the time scheduling of the program, and is measured in the cumulate delays of the different phases of the program, measured in weeks.

These five indicators constitute the basis for a homogeneous evaluation for all the capacity building programs. Nevertheless, it is perfectly logical, and also recommended, that the "Capacity Building Evaluation Committee" sets further KPI's that are specific for that kind of capacity building.

The role of the evaluation Committee is crucial in the monitoring of the indicators, as these programs last typically many months, and a poor performance can be examined in their root

causes and a number of corrective actions can be suggested by the Committee to the Contract execution manager.

As a technical tool to support the project management of the capacity building intervention, it is recommended the creation of a central data-base that gathers the KPI used in the

evaluation of the ongoing programs and can ease the comparison between expected objectives of the intervention and results obtained at the end of the intervention itself. This will allow to MoTL a more effective control of the process.

3.4.13 The CBMS Implementation Strategy

The first success factor to implement effectively the CBMS is that the Authorities/Companies under the supervision of the MoTL perceive the new procedures and organs not as an additional bureaucratic burden, but as a real help in improving the effectiveness of their Capacity building programs.

To achieve this success factor, it is crucial the choice of the person who will be in charge to become Responsible of the **“Capacity Building Programs Coordination Unit”** inside MoTL. This person should have a solid academic background and experience both in transport field and in education program design and evaluation. He should express drive and motivation in order to transmit enthusiasm to the designated Responsible of **“Capacity Building programs Supervision Unit”** of the Authorities/Companies, who are the concrete proposer and executers of the capacity building interventions.

The second implementation success factor is a clear expression of the politic willingness to give importance and priority to the capacity building stream of activities. In this direction it is recommended that the first meetings of the **“Capacity Building Evaluation Committee”**

would be chaired by H.E. the Minister in person, and the Director General /managing Directors of the Authorities /Companies would participate as aggregate members of the Committee.

The third, and decisive, success factor is a strict control by MoTL of the financial flows coming from international Donors or Development Banks, that are the main source of funding for capacity building. In this direction it is also recommended a strict coordination, inside MoTL, of the responsible of the **“Capacity Building Programs Coordination Unit”** with the Responsible of the PIU of the World Bank Projects, in order to affirm that the CBMS is a mandatory element to access to the funds. The planning of the Developing Bank funding in capacity building initiatives is also the tool to keep the grip on the institutions that, after the new Proclamation on “Definition of Power and Duties of the Executive Organs of the FDRE”, are not anymore under the supervision of MoTL, and particularly for ERA, EDR and ERC.

These three institutions should be brought to participate to the CBMS, through the necessary dialogue with their respective Supervising entities.

3.5 TRANSPORT INVESTMENTS PRIORITIZATION AND SCHEDULING

3.5.1 An overview of the prioritisation within the transport sectors

In the sectoral reports, part of the analysis is dedicated at the defining of the priorities of the sector, and this is reflected in a prioritisation of the investment programs of the sector itself. Each sector has approached the prioritisation issue with the methodology that is appropriate for that sector. As an example, the road sector has utilized the HDM4 model as the prioritisation tool, in conformity with what is generally recommended for the road sector by prestigious institutions like the World Bank.

In the present paragraph a synthesis of what emerges from the sectoral report is conducted, with specific reference to the “Go Ahead” Scenario, that can be considered the base scenario. For the investments planned in the alternative scenarios it is possible to refer to the sectoral reports.

Road Sector

The first kind of prioritisation is done in defining the time horizon of each investment: if to be implemented in the short (2025), medium (2035)

or long range (2050). This time-span list is compiled in accordance to the traffic projections coming from the model: each investment is planned when the existing infrastructure is not anymore sufficient to absorb the expected traffic

and an enlargement or a new infrastructure is needed to prevent major congestion phenomena. The results for the “GoAhead” Scenario are described in the following table.

Table 45: Go Ahead Road Network projects

ACTIONS	Short Term 2025	Medium Term 2035	Long Term 2050
FYP - Ongoing Road Projects List	X		
Mojo-Awassa Expressway	X		
Dire Dawa – Dewele Expressway Completion	X		
Addis Ababa - Holeta-Ambo Expressway	X		
Addis Ababa - Alemgena-Woliso Expressway	X		
Addis Ababa-Debrebirhan Expressway		X	
Alemgena-Butajira Expressway			X
Dire Dawa-Dengego-Harar Expressway	X		
Awash Junction-Adaitu Expressway		X	
Awash junction – Dire Dawa Expressway		X	
Adaitu-Mille-Semera Expressway			X
Addis Ababa-Commando Expressway		X	
Melkasa - Meteara - Awash Junction Expressway	X		
Semera - Djibouti/Eritrean border Expressways			X
Debre Berhan - Mekele - Eritrea border Expressway			X
Commando - Bahir Dar - Metema - Sudan border Expressway			X
Ambo - Gimbi - Asosa - Sudan border Expressway			
Gimbi - Gambela - South Sudan border Expressways			X
Woliso - Jimma - Mizan Teferi - South Sudan Border Expressway			X
Awassa - Moyale - Kenya border Expressway			X
Awassa - Bilata - Filtu - Somalia border Expressway			
Enlarging 3+3 lanes Addis – Nekemte Expr.			
Enlarging 3+3 lanes Modjo – Ziway Expr.			
Enlarging 3+3 lanes Ziway - Awassa Expr.			
Enlarging 2+2 lanes Harar -Bombas Expressway	X		
Enlarging 2+2 lanes Bombas - Giggiga Expressway			X
Giggiga - Kebridehar - Somaliland border Expressway			
RING ROAD 0: Addia Ababa New Ring Road	X		
RING ROAD 1: Ambo - Weliso - Welkite - Butajira - Ziway - Sagure - Asela			X
RING ROAD 2: Semera -Maychew –Gondar –Nekemte -Jimma-Awassa-Shikhussein-Dodoma			
Enlarging 3+3 lanes Addis Ababa - Modjo Exprssway.		X	
Enlarging 2+2 lanes Dire Dawa - Dewelle- Djibouti border,			X
Enlarging 2+2 lanes Holeta - Muger	X		
Enlarging 2+2 Lanes Commando - Bahir Dar - Metema - Sudan border			
Enlarging 2+2 lanes Adama -Melkasa - Asela	X		
Interventions for road capacity adaptation			X

The most relevant investments have been analysed with the HDM4 tool in order to study

the elements to define a hierarchy. The results are the following.

Table 46: Hdm4 Results

Scenario	Length Km	Traffic				Disc Rate 8% EIRR %	ENPV Million USD	NPV/Cost Million USD
		2022	2025	2035	2050			
		AADT	AADT	AADT	AADT			
Go Ahead 2025								
Holeta - Ambo Expressway	85	9,392	9,843	17,456	75,715	26.6	10,930	6.74
Alem Gena - Woliso Exp	105	6,889	4,954	10,508	42,715	22.1	9,741	4.48
Dengengo - Harar	27	5,284	3,258	6,339	18,282	17.8	1,369	2.45
Adama - Awash Junction	115	3,990	8,019	12,064	38,353	22.3	9,708	5.03
Go Ahead 2035								
Awash - Adaitu Exp.	275	2,884	3,131	4,859	10,318	17.5	5,524	1.65

Scenario	Length	Traffic				Disc Rate 8% EIRR %	ENPV Million USD	NPV/Cost Million USD
		2022	2025	2035	2050			
	Km	AADT	AADT	AADT	AADT			
Awash - Dire Dawa Exp.	285	5,002	4,092	3,837	11,484	21.0	24,219	1.97
AddisAbaba - Debre Brihan Exp.	130	2,779	3,492	5,442	28,546	15.3	4,939	1.90
Addis Ababa - Commodo Abay River Exp.	208	4,289	4,301	8,298	26,951	22.8	25,461	7.03
Go Ahead 2050								
Awassa - Moyale Exp.	499	1,377	1,251	3,293	10,536	34.6	41,621	9.60
Adaitu Mile Semera Galafi Exp.	177	1,476	1,419	2,307	5,386	22.7	3,711	1.40
Alem Gena - Butajira Exp.	117	5,539	6,411	9,810	22,555	27.4	13,585	19.50
Debre Brihan Mekelle - Eritrean Border Exp.	792	1,707	1,834	3,060	11,177	32.7	41,459	6.7
Commodo Abay River - Bahir Dar Metema Exp.	656	1,604	2,025	3,831	14,867	34.3	34,276	7.2
Ambo Nekemte Mekanajo Exp.	410	1,274	1,459	2,857	10,872	27.7	23,925	6.19
Woliso Jimma Mizan Teferi Exp.	545	1,416	1,497	2,421	7,649	19.7	11,547	2.2
Aposto - Bitata - Dolo Somali Border Exp.	623	409	451	795	2174	6.6	2,324	-0.202

The parameter NPV/Cost is the one that defines the priority rank of the investment.

Railways Sector

For the Railway Sector the prioritisation is conducted with reference to the concept of "Cost Effectiveness", expressed by the variable "Traffic

units per year divided by the amount of investments". The Traffic Units are the total Passenger-km per year plus the total Tons-km per year. The prioritisation, also in this case, is referred to the "Go Ahead" Scenario.

The results are shown in the following table.

Table 47: Railway Investments Rank

Line/investment	Infrastructure Investment (Million \$)	Rolling stock investment (Million \$)	Total Investment (Million \$)	Pax-Km (000 units/year)	Ton-km (000 units/year)	Traffic units (000 units/year)	Cost effectiveness (000 traffic units/year per \$ of investment)	Ranking
Addis - Djibouti	1028	899	1927	14,270.839	12,882.565	27,153.404	14,09258407	1
Awash-Kombolcha-Haragaria	358	441	799	754,514	2,922.826	3,677.340	4,601506751	2
Mekele — Haragaba	835	198	1033	413,855	1,111.940	1,525.795	1,477415947	3
Weldiya - Assab Port Railway	1880	290	2170	236,135	1,711.079	1,947.214	0,89727124	6
Weldia - Wereta — Matema (Sudanorridor)	3084	264	3348	1,055.619	1,501.516	2,557.135	0,763775157	7
Wereta- Finote Selam	1296	113	1408	484,670	590,682	1,075.352	0,763732895	8
Mojo - Hawassa	1194	106	1299	391,978	533,555	925,532	0,712291742	9
Hawassa - Woo - Moyle	4232	317	4549	1,123.233	1,764.289	2,887.521	0,634706525	10
Sebeta-Jimma-Bedele—Booma South Sudan Border	4834	246	5080	1,822.845	1,274.884	3,097.729	0,609843198	11
Dire Dawa - Berbera	1121	184	1305	0	1,234.751	1,234.751	0,945971751	5
Adama- Gasera	1479	67	1546	552,792	45,599	598,391	0,387162569	13
Ejaji- Kurmuk	2760	119	2879	729,083	626,076	1,355.158	0,470675153	12
Rejii- Holeta	511	60	571	422,447	272,484	694,931	1,216786373	4

It must be noted that two major investments – Awash-Komolcha-Haragaria and Mekelle-Haragaria – are ongoing investments and the Addis-Djibouti line, although operational since more than three years, cannot be considered completed and in this sense is an ongoing investment too. In the case of the ongoing investments the amount of Capex considered is the one that is necessary to complete them, with the exclusion of the funds already spent. This is perfectly logical, as any analysis about the future decisions must be conducted in marginal terms.

In other words, the ranking must reflect also the priority not to vanish the public money already spent in that lines. As a result, the ongoing investments are the ones that have the highest ranking.

Aviation Sector

In the Aviation sector the investment plan has a strong reference in the ten years plan issued by the MOTL. Some additional investments are added, and the timing of the investment are

revised in accordance with the projected traffic flows.

The list of investments in this sector is not only the building of new infrastructures, as the technology upgrading for air navigation plays a

major role in the sector. In this sense each investment can be seen as an action.

In the following table are reported the investment actions envisaged.

Table 48: List of Actions in Aviation Sector

ACTIONS	Date of Completion in 10 YDPD	Short Term 2025	Medium Term 2035	Long Term 2050
Institutional Transformation Project		x		
A - Aerodrome projects				
1 - Headquarter construction in Addis Ababa	Jan 2021	x		
2 - New tower in Addis Ababa airport expansion	Jan 2020	x		
3 - Tower and related construction in Shire Airport	Jul 2018	x		
4 - Tower and related construction in Jinka Airport	Jan 2019			
5 - Tower and construction in Hawassa Airport	Mar 2019			
6 - Tower and related construction in Assosa Airport	n.a.	x		
7 - Tower and related construction in Semera Airport	Aug 2019	x		
8 - Spare parts purchase for the Addis Ababa bole airport radar (PSR/MSSR) devices improvement project	2021	x		
9 - For ADS-B missing devices purchase and installation project	2021	x		
10 - For the purchase and installation project of different facilities for airports	2021		x	
11. For SSR (Approach MLAT) observation devices purchase and installation project	2020	x		
B - New projects to start				
1 - Building towers and air navigation facilities for Bahirdar, Nekemt and Dembidolo airports	Jan 2022	x		
2 - Building the Bridge from the Dire Dawa airport to Biken Bet	Jun 2020	x		
3 - Building towers and air navigation facilities for Mizan Aman, Gore Metu, Debre Markos, Yabelo and Negele Borena airports	Jan 2025		x	
4 - Building aviation academy center, aviation museum, simulated firefighting center, additional buildings and recreation center in the compound of the head office	Jan 2029			x
5 - Purchasing and installing devices to upgrading the Aeronautical Information Service (AIS) to Aeronautical Information Management (AIM)	2023	x		
C - Projects on research and designing stage				
Aerodrome Projects				
1 - Tower designing for Bahir Dar, Nekemt and Dembidolo airports	Jun 2020	x		
2 - Design researching for the bridge from the Dire Dawa airport to Biken Bet	Jun 2020	x		
3 - Tower designing for Jimma, Mizan Aman, Gore Metu, Debre Markos, Yabelo and Negele Borena	Jun 2020		x	
4 - Designing the buildings of the aviation academy center, aviation museum, simulated firefighting center, additional buildings and recreation center in the compound of the head office	Jan 2023	x		
5 - Completing air navigation facilities and improving their services at respective standards of regional airports	2030		x	
6 - Upgrading the aeronautical voice information exchange between pilots and air traffic controllers to (VDL) VHF Data Link	2023		x	
7 - Changing the Navigation Aids from Ground Based to satellite (GNSS) flight procedure in order to modernize the air space considering the progress in air traffic	2024		x	
8 - Upgrading the country's surveillance to WAM	2027		x	
D - Additional actions for infrastructure development				
1 - New Ethiopia International Airport in Bishoftu, Oromia region	n.a.			x
2 - Open airport in Nekemt	n.a.	x		
3 - New airport in Mizan Aman and Gore Metu	n.a.		x	
4 - New airport in Debre Markos, Negele Borena and Yabelo	n.a.			x
5 - N. 6 new passenger terminals	n.a.		x	
6 - N. 10 new airstrips included in 10 Years Plan	n.a.		x	
7 - Creating N. 2 cold storage facilities for air cargo at Dire Dawa and Hawassa	n.a.		x	

ACTIONS	Date of Completion in 10 YPDP	Short Term 2025	Medium Term 2035	Long Term 2050
8 - Creating N. 5 cold storage facilities for air cargo at at different airports	n.a.			x
9 - Additional N. 5 new airstrips	n.a.			x
10 – Create cold rooms for vaccines and pharmaceuticals at 20 airports.	n.a.	x		

Legend to table 4:

- > in yellow actions already included in 10 Years Perspective Development Plan (2013-2022) expected to be completed by 2025;
- > in orange actions included in 10 Years Perspective Development Plan (2013-2022) expected to be completed by 2035;
- > in white additional actions expected to be completed by 2050.

The prioritisation of these action has been done in qualitative terms, with explicit reference to the integration of the Aviation services with the other necessary functions. The list of priorities for the passenger services is the following:

- fast access links to the international aviation hub in Addis Ababa by public transport either road or rail, especially for the newly announced intercontinental airport. And this will be beneficial to both Ethiopian residents and international tourism;
- ease of access by road for all regional airports where there is no rail infrastructure;
- availability of adequate parking areas at airports in relation to the size of each one and in consideration of the requirements for passengers and cargo traffic;
- availability of adequate public transport in the regional areas around airports in order to create incentives for the use of public transport by residents and also to allow international travellers find public transport options in the regions they visit;
- make each airport a full-service hub for all kind of travellers by creating a complete offer of information and ancillary services (banks, car rental, hotel bookings, travel agencies, restaurants, excursions booking, travel ticketing) to allow a one-stop-shop experience for all kind of travellers;
- create real estate development areas for different uses (offices, hotels, outsourcing service providers, etc.) near the airports in order to have potential business demand for air transport services.

The list of priorities for the cargo services is the following:

- expanding the cargo facilities at regional airports;
- creating a liaison between EAG and the main logistic groups in order to foster intermodal transport for goods;
- consider the potential relation with air cargo and airports when planning the development of freight ports;
- plan the development of new industrial sites for the production of goods that can be exported via air routes taking advantage from the proximity of air cargo infrastructure; include air cargo facilities in the intermodal chain activated for export of goods from neighbouring countries.

Logistics Sector

In the logistics sector the report analyses, focused on the international port corridors, come to a clear strategic conclusion: the priority should be assigned to the international corridors that materialize the “trident”, that is the connections to the ports of Djibouti, of Assab in Eritrea and of Berbera in Somaliland. The trident can be completed with its prosecution up to the South Sudan, the only double land locked neighbouring country. This corridor for South Sudan can be easily competitive compared to its alternative, that is the corridor connecting the Kenya ports.

This priority must influence the prioritisation of the road and railways infrastructures that will constitute the “Trident” corridors.

This vision is synthesized by the following picture.

Figure 26: Diversifying Port Access for Ethiopia trade



Furthermore, the dry-ports list, together with the list of industrial, agricultural and manufacturing size is scheduled in terms of timing of construction.

In particular, in the short term (2025) the realization of 3 Dry Port and 3 Industrial Park:

- Hawassa Dry Port
- Assosa Dry Port
- Jimma Dry Port
- Bole Lemi Industrial Park 2
- Kilinto Industrial Park
- Dire Dawa Industrial Park.

In the medium and long term (2035/2050) the following Agro-Industrial and Industrial Parks are planned:

Year 2035:

- Baeker IAIP (Integrated Agro Industrial Park)
- Yirgalem IAIP (Integrated Agro Industrial Park)
- Bure IAIP (Integrated Agro Industrial Park)
- Bulbula IAIP (Integrated Agro Industrial Park)

Year 2050:

- Adama Industrial Park 2
- Semera Industrial Park
- Assosa Industrial Park
- Aysha Industrial Park
- Kingdom Linen Industrial Zone.

Inland Waterways

By the studies and sector analyses carried out, the most strategically important cities in which to build new port infrastructures have been identified.

The design solutions of new port are two:

- the Design solution 1 consists in the realization of a “full port” characterized by:
 - > Commercial Port Area;
 - > Fishing area and shipbuilding;
 - > Passenger Area.
- the Design solution 2 consists in the realization of a port characterized by only Passenger Area.

The **Design solution 1** is planned in:

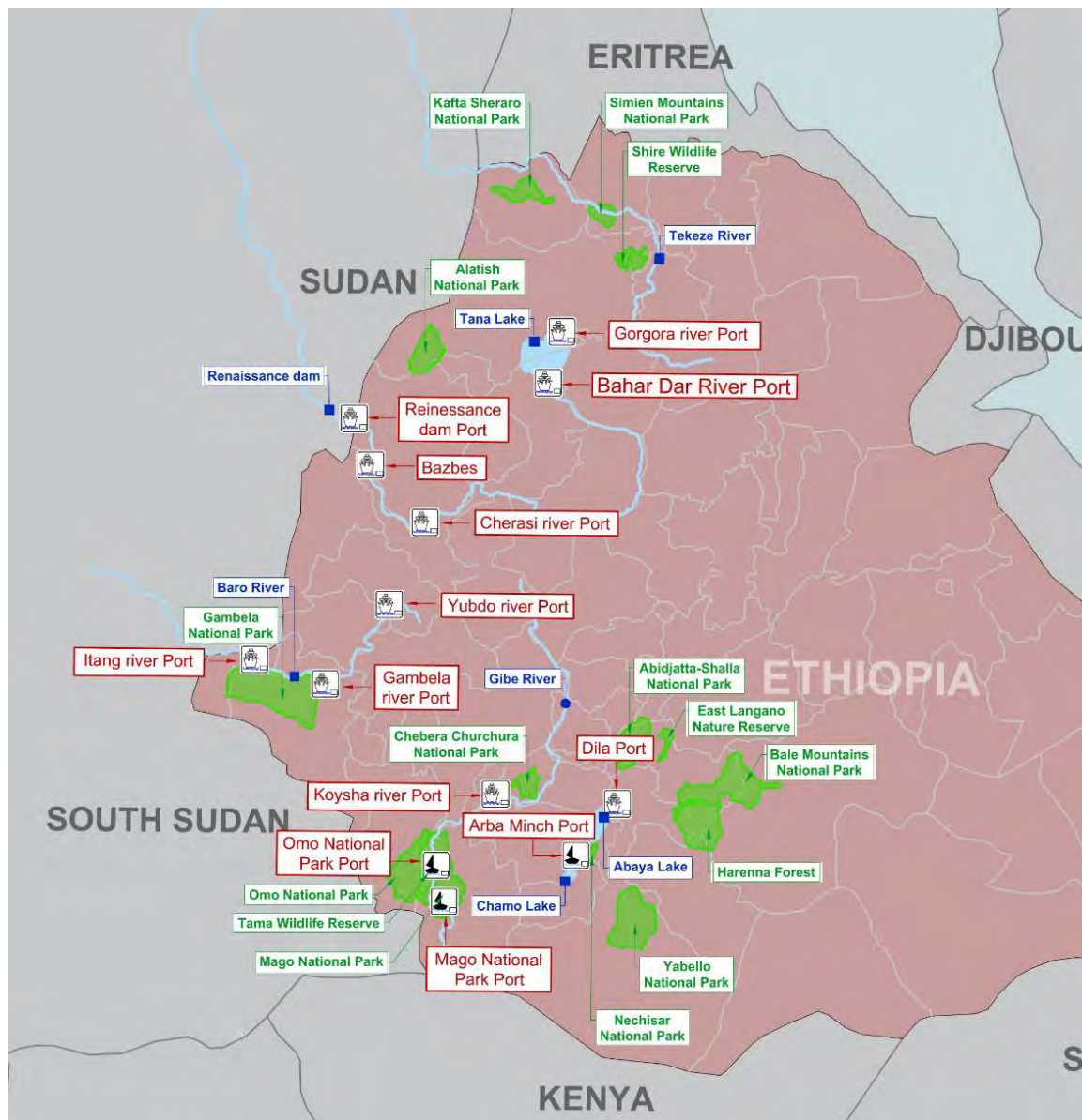
- Tana Lake:
 - > Bahar Dar
 - > Gorgora
- Blue Nile:
 - > Renaissance Dam
 - > Bazbes
 - > Cherasi
- Baro River:
 - > Gambela
 - > Yubdo
- Abaya lake:
 - > Dila
- Gibe River:
 - > Koysa

The **Design solution 2** is planned in:

- Chamo Lake:
 - > Arba Minch
- Gibe River:
 - > In the Tama Wildlife Reserve
 - > In the Mago National Park .

The investment envisaged in the plan, together with the Design solution adopted, are shown in the following picture.

Figure 27: Inland Waterways: Design solution Map



3.5.2 The prioritisation of the major investment programs

As previously mentioned, each sector has expressed its own prioritisation of the sector investments in accordance with the criteria and the methodology most appropriate for the Sector itself. On the other hand, it is important to come to a synthesis also in an inter-modal perspective, particularly for the land transport, where an investment in a highway or in a railway line can be considered in the short run as alternatives if made on the same corridor.

This brings to the necessity to have a methodology enough wide to consider not only transport factors, but also impacts on other domains, such as environment and macro-economic variables. For this reason, it has been

selected, in coherence with what envisaged into the Terms of Reference, a Multi-criteria Analysis framework (MCA)⁶².

The Multi-criteria framework is organized to compare, for each starting date (2025, 2035 and 2050) the major investments that can be homogeneously compared. In order to maintain the homogeneity concept, the comparison is done separately for infrastructure that have a

⁶² For an application of MCA on land investment prioritisation, it is possible to refer to Pearman, A.D., Mackie, P.J., May A.D and Simon, D. (1989) 'The use of multi-criteria techniques to rank highway investment proposals', in A.G. Lockett and G. Islei (eds.) *Improving Decision Making in Organisations*, Springer Verlag, Berlin,

linear shape (Roads and Railway lines), from infrastructure that have a punctual shape (Airports and Dry ports). This is necessary because the linear infrastructure contain in themselves, and describes, also the transport event, while the punctual infrastructures are just the terminals of transport events that cannot be projected with the necessary abundance of data. As a consequence, the criteria selected for the two kinds of infrastructure have been differentiated.

The" linear Infrastructures "Prioritization

The" linear Infrastructures" are the 16 highways and the 13 railway lines proposed, for a total of 29 investments, that result to be the most relevant of all the Masterplan. This list encompasses the substance of what is expressed in the logistic sector report in terms of corridors. The list of the" linear Infrastructures" investments is reported in the following table.

Table 49: List of" linear Infrastructures" investment prioritised with the MCA analysis

2025
ROAD
Holeta - Ambo Expressway
Alem Gena - Woliso Exp
Dengengo - Harar
Adama - Awash Junction
RAIL
Addis - Djibouti
Awash - Kombolcha – Haragaria
Mekele – Haragaba
2035
ROAD
Awash - Adaitu Exp.
Awash - Dire Dawa Exp.
AddisAbaba - Debre Brihan Exp.
Addis Ababa - Commodo Abay River Exp.
RAIL
Weldiya - Assab Port Railway
Mojo - Hawassa
Hawassa - Woo - Moyle
Dire Dawa - Berbera
2050
ROAD
Awassa - Moyale Exp.
Adaitu Mile Semera Galafi Exp.
Alem Gena - Butajira Exp.
Debre Brihan Mekelle -Eritrean Border Exp.
Commodo Abay River -Bahir Dar Metema Exp.
Ambo Nekemte Mekanajo Exp.
Woliso Jimma Mizan Teferi Exp.
Aposto - Bitata - Dolo - Somali Border Exp.
RAIL
Weldia - Wereta - Matema (Sudan Corridor)
Wereta- Finote Selam
Sebeta-Jimma-Bedele - Booma South Sudan Border
Adama- Gasera
Ejaji- Kurmuk
Rejii - Holeta

The selection of the criteria to be used to evaluate the investments and to assess their priority, in accordance with the best practices, reflects on one side the literature and on the other side the key points of the situation on field, that, in the case of the peculiar economic situation of Ethiopia, is to be very sensitive to the equilibrium of the Public Budget and to the international payment balance,

due to the necessity to limit the growth of public Deficit and the shortage of Foreign Exchange (FX).

Five criteria have been selected, each expressed by a single variable:

- 1) the **Cost Effectiveness**, measured by a variable that divides the traffic units (passengers Km plus Tons km) at specific date (2050) by the Capex of the investment. These criteria reflect the importance of the

investment from a transport point of view, together with the effectiveness of the Capex expenditure. In order to create a homogeneous situation between road and rail investments, the Capex expenditures considered are just the ones to build the infrastructure, with the exclusion of the investments in railway rolling stock or road vehicles. This circumstance allows to interpret the criteria in terms of how effective are the public powers, in building the infrastructure, to enable the users (privates, road transport companies, railway transport companies, public service companies) to keep the opportunity to use it by making their own investments;

- 2) the **Financial Internal rate of Return (FIRR)**, measured by the rate that financially equilibrates all the inflows and outflows that the investment will generate in its life cycle, and then reflects the ability of the investment to be repaid over time with the revenues stream that generates. This is particularly important to avoid to charge too heavy burden on the Public Deficit. The yearly outflows are either Capex - to build the infrastructure and (in the case of railway lines) to buy the rolling stock - or Opex, the expenses to operate and maintain the expressway or the railway line. The yearly inflows, in the case of Expressways, are expressed by the toll revenues, calculated at the present toll tariff levels, and in the case of railways are the revenues for the transport of passengers and/or freights at the present tariff levels of the Addis- Djibouti line. After a thirty years period of operation the final value is calculated by the value of the perpetuity coming from the net inflow of the last year. The monetary values are expressed in US Dollars, and this implies that the rate of return of each investment can be compared with the interest to be paid for a long-term loan in USD. This set of data will be also the basis of the Investment financing chapter.
- 3) the **FX absorption**. It is calculated as the part of Capex of the specific investment that needs to be spent on the international market to procure that specific category of assets. This is a criterion particularly binding for the public choices, as it impacts directly on the foreign payments balance. Being negatively correlated (the higher the FX required, the lower the priority), it has been considered the reciprocal of the number (1/X) in order to have all the

variables positively correlated. The categories of assets considered are: railway lines, railway rolling stocks, expressways and vehicles (divided in: cars, land rover, small bus, large bus, small truck, medium truck, heavy truck, truck-trailer). In this case also the capex spent by the privates to buy vehicles have been considered, as also these payments absorb considerable amounts of FX.

- 4) the **External Costs generated**. The external costs are the ones that are borne by the community, without entering in the cost of the transport service paid by the users. In the transport policies definition, the external costs play a key role, particularly considering the adhesion of FDRE to the UN Sustainable Development Goals. The categories of external costs considered are: accidents, air pollution, climate change, noise, well-to tank cost of the fuels, habitat damage. The external costs are associate with the Passenger-km run via car, via bus or via electric train and with the Tons-km transported via small truck, heavy truck or train. For the unit external costs, the reference has been the most recent (2019) EU handbook on the external cost of transport. Being negatively correlated (the higher the external costs, the lower the priority), it has been considered the reciprocal of the number (1/X) in order to have all the variables positively correlated.
- 5) **Being part of a strategic international corridor**. In accordance with what said in the previous paragraph about the strategic vision emerged in the logistics sector, the infrastructures that belong to the "trident" (the road or rail connections between the ports of Djibouti, Berbera and Assab and the Mojo dry-port, together with its prosecution up to the South Sudan Border) are considered as strategic. The qualitative assessment, with the use of a "dummy variable", is then transformed in quantitative values.

All the five variables, each reflecting a criterion, have been normalized, by dividing all the values by the maximum value, in order to avoid that the scale influence the weighting structure. All the values, after normalization, range between 0 and 1.

The weighting structure, to calculate the weighted average of the five variables and obtain the final score (the one that defines the priority rank), has been kept neutral, with all the weights

set at the value of 0,2. In the next paragraph a sensitivity analysis will be exposed to evaluate how the prioritisation is influenced by the weighting structure. In any case, the political willingness of the competent Institution has the full legitimacy to change the weighting structure to reflect the relative importance of the five

criteria, in order to give more importance to some and less to some other. The use of the MCA calculation model will easily allow to calculate the new priority ranking in accordance with the different weighting structure.

The performance matrix dimensions for the MCA are in the following table.

Table 50: The Performance Matrix Dimensions

Performance Matrix MCA	CRITERIA/WEIGHT										
	Cost effectiveness	Q1	FIRR	Q2	FX	Q3	External Costs	Q4	Strategic Corridor	Q5	Total Points
2025											
ROAD		0,2		0,2		0,2		0,2		0,2	
Holeta - Ambo Expressway	--		--		--		--		--		--
Alem Gena - Woliso Exp	--		--		--		--		--		--
Dengengo - Harar	--		--		--		--		--		--
Adama - Awash Junction	--		--		--		--		--		--
RAIL	--		--		--		--		--		--
Addis - Djibouti	--		--		--		--		--		--
Awash - Kombolcha – Haragaria	--		--		--		--		--		--
Mekele – Haragaba	--		--		--		--		--		--
2035											
ROAD											
Awash - Adaitu Exp.	--		--		--		--		--		--
Awash - Dire Dawa Exp.	--		--		--		--		--		--
AddisAbaba - Debre Brihan Exp.	--		--		--		--		--		--
Addis Ababa - Commodo Abay River Exp.	--		--		--		--		--		--
RAIL	--		--		--		--		--		--
Weldiya - Assab Port Railway	--		--		--		--		--		--
Mojo - Hawassa	--		--		--		--		--		--
Hawassa - Woo - Moyle	--		--		--		--		--		--
Dire Dawa - Berbera	--		--		--		--		--		--
2050											
ROAD											
Awassa - Moyale Exp.	--		--		--		--		--		--
Adaitu Mile Semera Galafi Exp.	--		--		--		--		--		--
Alem Gena - Butajira Exp.	--		--		--		--		--		--
Debre Brihan Mekelle -Eritrean Border Exp.	--		--		--		--		--		--
Commodo Abay River -Bahir Dar Metema Exp.	--		--		--		--		--		--
Ambo Nekemte Mekanajo Exp.	--		--		--		--		--		--
Woliso Jimma Mizan Teferi Exp.	--		--		--		--		--		--
Aposto - Bitata - Dolo - Somali Border Exp.	--		--		--		--		--		--
RAIL											
Weldia - Wereta - Matema (Sudan Corridor)	--		--		--		--		--		--
Wereta- Finote Selam	--		--		--		--		--		--
Sebeta-Jimma-Bedele - Booma South Sudan Border	--		--		--		--		--		--
Adama- Gasera	--		--		--		--		--		--
Ejaji- Kurmuk	--		--		--		--		--		--
Rejii - Holeta	--		--		--		--		--		--

After the quantification and transformation of all the variables in the ways above described, the

calculated performance matrix is in the following table.

Table 51: Performance Matrix Calculated

Performance Matrix MCA	CRITERIA/WEIGHT										
	Cost effectiveness	Q1	FIRR	Q2	FX	Q3	External Costs	Q4	Strategic Corridor	Q5	Total Points
2025											
ROAD		0,2		0,2		0,2		0,2		0,2	
Holeta - Ambo Expressway	1,00		0,27		0,10		0,01		0,33		0,34
Alem Gena - Woliso Exp	0,53		0,19		0,16		0,01		0,66		0,312
Dengengo - Harar	0,27		0,12		1,00		0,10		0,66		0,43
Adama - Awash Junction	0,31		0,14		0,21		0,02		0,66		0,269
RAIL											
Addis - Djibouti	0,23		1,00		0,06		0,01		0,66		0,39
Awash - Kombolcha – Haragaria	0,09		0,41		0,16		0,12		0,66		0,288
Mekele – Haragaba	0,02		0,04		0,10		0,28		0,33		0,154
2035											
ROAD											
Awash - Adaitu Exp.	0,06		0,03		0,26		0,04		0,66		0,210
Awash - Dire Dawa Exp.	0,15		0,12		0,15		0,02		0,66		0,222
AddisAbaba - Debre Brihan Exp.	0,43		0,27		0,13		0,01		0,33		0,236
Addis Ababa - Commodo Abay River Exp.	0,38		0,24		0,10		0,01		0,33		0,211
RAIL											
Weldiya - Assab Port Railway	0,01		0,08		0,05		0,25		0,66		0,209
Mojo - Hawassa	0,01		0,00		0,05		0,42		0,33		0,16002
Hawassa - Woo - Moyle	0,01		-0,03		0,03		0,16		0,33		0,099
Dire Dawa - Berbera	0,01		0,07		0,08		0,51		0,66		0,265
2050											
ROAD											
Awassa - Moyale Exp.	0,13		0,18		0,10		0,01		0,33		0,151
Adaitu Mile Semera Galafi Exp.	0,08		0,11		0,36		0,05		0,66		0,251
Alem Gena - Butajira Exp.	0,33		0,37		0,20		0,02		0,33		0,248
Debre Brihan Mekelle - Eritrean Border Exp.	0,15		0,20		0,05		0,01		0,33		0,149
Commodo Abay River-Bahir Dar Metema Exp.	0,21		0,28		0,05		0,01		0,33		0,18
Ambo Nekemte Mekanajo Exp.	0,15		0,20		0,11		0,01		0,33		0,16006
Woliso Jimma Mizan Teferi Exp.	0,11		0,14		0,10		0,01		0,66		0,205
Aposto - Bitata - Dolo - Somali Border Exp.	0,03		-0,02		0,16		0,04		0,33		0,108
RAIL											
Weldia - Wereta - Matema (Sudan Corridor)	0,01		0,07		0,03		0,17		0,33		0,122
Wereta- Finote Selam	0,01		0,01		0,07		1,06		0,33		0,295
Sebeta-Jimma-Bedele - Booma South Sudan Border	0,01		-0,08		0,02		0,49		0,66		0,219
Adama- Gasera	0,0036		-0,15		0,06		0,54		0,33		0,159
Ejaji- Kurmuk	0,0043		-0,08		0,03		0,30		0,33		0,118
Rejii - Holeta	0,01		0,00		0,18		1,00		0,33		0,303

A number of comments can be useful to better analyse the phenomena:

- in general, the highways have a cost effectiveness far superior of the railway lines; this depends on the less expensive investment required to build the infrastructure. The best performer on this criterion is the Holeta- Ambo Expressway, that has a performance approximately 300 times superior to the worst performer, that is the railway line Adama-Gasera;
- the criterion of FIRR shows, as expected, a better performance of the expressways

compared to the railway's lines. The best performer, the Addis- Djibouti railway line, is due to the fact that the bulk of the investment, already done, doesn't enter in the calculation. Five railways and one expressway show a negative internal rate of return;

- For the FX criterion, the best-in-class results to be the Highway Dengengo-Harar, due to limited construction cost and not high traffic, with consequent limited impact on the FX for the vehicles investment. The worst performer is the Sebeta- Sudan Border railway line, that

has an impact on FX fifty times superior than the best performer.

- For the External costs criterion, as expected, the railway lines perform far better than the Expressways, both for the use of electricity as energy source and for a higher grouping of each forwarding. The best performer is the railway line Rejji- Holeta, due to the limited traffic developed and the consequent limited environmental impact. Out of the sixteen

Expressways, nine show an impact one hundred superior than the best performer.

- For the " Strategic corridor belonging" criterion, it can be noted that out of the 29 investments, six Expressways and five railway lines can be considered as strategic.

The ranking for each comparable time horizon are reported in the table below.

Table 52: Ranking per period

Synthesis MCA	Total Points	Rank of the period
2025		
ROAD		
Holeta - Ambo Expressway	0,34	3
Alem Gena - Woliso Exp	0,312	4
Dengengo - Harar	0,43	1
Adama - Awash Junction	0,269	6
RAIL		
Addis - Djibouti	0,39	2
Awash - Kombolcha – Haragaria	0,288	5
Mekele – Haragaba	0,154	7
2035		
ROAD		
Awash - Adaitu Exp.	0,210	5
Awash - Dire Dawa Exp.	0,222	3
AddisAbaba - Debre Brihan Exp.	0,236	2
Addis Ababa - Commodo Abay River Exp.	0,211	4
RAIL		
Weldiya - Assab Port Railway	0,209	6
Mojo - Hawassa	0,16002	7
Hawassa - Woo - Moyle	0,099	8
Dire Dawa- Berbera	0,265	1
2050		
ROAD		
Awassa - Moyale Exp.	0,151	10
Adaitu Mile Semera Galafi Exp.	0,251	3
Alem Gena - Butajira Exp.	0,248	4
Debre Brihan Mekelle -Eritrean Border Exp.	0,149	11
Commodo Abay River -Bahir Dar Metema Exp.	0,18	7
Ambo Nekemte Mekanajo Exp.	0,16006	8
Woliso Jimma Mizan Teferi Exp.	0,205	6
Aposto - Bitata - Dolo - Somali Border Exp.	0,108	14
RAIL		
Weldia - Wereta - Matema (Sudan Corridor)	0,122	12
Wereta- Finote Selam	0,295	2
Sebeta-Jimma-Bedele - Booma South Sudan Border	0,219	5
Adama- Gasera	0,159	9
Ejaji- Kurmuk	0,118	13
Rejji - Holeta	0,303	1

For the horizon 2025 the best score is of the Expressway Dengengo- Harar, that is just 27 km long but expresses a significant potential. The Addis- Djibouti line additional investments scores in second place and it is evident the convenience to complete the investment in order to widen the capacity of the line, that has a very big market

potential. Very good potentials also for the Holeta – Ambo and the Alem Gena- Woliso expressways. The Awash- Kombolcha rail line is near to be completed and obviously it should be, also because is part of the connection with the port of Assab. The Mekkele - Haragaba rail line

seems much less interesting, with one of the lowest scores of the total list.

Among the 2035 project package the most relevant is the railway line Aisha –Berbera. Also the expressways Addis Ababa-Deebre Birhan and Awash-Dire Dawa show a significant potential.

In the 2050 domain are most relevant the railway lines Rejii-Holeta and Wereta-Finote Selam, and among the Expressways the Adaitu-Mile-Semera –Galafi and the Alem Gena-Butajira.

It is also useful to show the general ranking for all the 29 investments. This is particularly useful for an investment, being low in the ranking of the specific starting date, is postponed and then enters in competition with a new set of investments. Of course, the overall ranking allows to compare each investment with any sub-group of other investments.

Table 53: Overall Ranking

Synthesis MCA	Total Points	Rank of the period	Average point of period
2025			0,31
ROAD			
Holeta - Ambo Expressway	0,34	3	
Alem Gena - Woliso Exp	0,312	4	
Dengengo - Harar	0,43	1	
Adama - Awash Junction	0,269	8	
RAIL			
Addis - Djibouti	0,39	2	
Awash - Kombolcha – Haragaria	0,288	7	
Mekele – Haragaba	0,154	23	
2035			0,20
ROAD			
Awash - Adaitu Exp.	0,210	16	
Awash - Dire Dawa Exp.	0,222	13	
AddisAbaba - Debre Brihan Exp.	0,236	12	
Addis Ababa - Commodo Abay River Exp.	0,211	15	
RAIL			
Weldiya- Assab Port Railway	0,209	17	
Mojo - Hawassa	0,16002	21	
Hawassa - Woo - Moyle	0,099	29	
Dire Dawa- Berbera	0,265	9	
2050			0,19
ROAD			
Awassa - Moyale Exp.	0,151	24	
Adaitu Mile Semera Galafi Exp.	0,251	10	
Alem Gena - Butajira Exp.	0,248	11	
Debre Brihan Mekelle -Eritrean Border Exp.	0,149	25	
Commodo Abay River -Bahir Dar Metema Exp.	0,18	19	
Ambo Nekemte Mekanajo Exp.	0,16006	20	
Woliso Jimma Mizan Teferi Exp.	0,205	18	
Aposto - Bitata - Dolo - Somali Border Exp.	0,108	28	
RAIL			
Weldia - Wereta - Matema (Sudan Corridor)	0,122	26	
Wereta- Finote Selam	0,295	6	
Sebeta-Jimma-Bedele - Booma South Sudan Border	0,219	14	
Adama- Gasera	0,159	22	
Ejaji- Kurmuk	0,118	27	
Rejii - Holeta	0,303	5	

It should be preliminarily underlined that the average score for each sub- period is somehow a positive finding: the highest scores (0,31) are on average allotted on the investments that have been selected as immediate (2025), and also the 2035 investments group shows an average score (0,20) slightly higher than the one of 2050 (0,19).

In the overall ranking it is important to note that the first ten positions are equally divided between rail and road, each of them with five projects. This gives somehow a confirmation that the mix of criteria chosen is balanced between road and rail.

The" punctual Infrastructures "Prioritization

The “Punctual Infrastructures” included in the “Go-ahead Scenario” consists in eight dry ports and seven national Airports.

Table 54: List of “punctual Infrastructures” investment prioritised with the MCA analysis

2025	2035	2025
DRYPORTS	DRYPORTS	DRYPORTS
Hawassa	Yabelo	Weldia
Jimma	Gamela	Gondar
Assosa		Gode
AIRPORTS	AIRPORTS	
Shire Airport	Jinka Airport	
	Hawassa Airport	
	Assosa Airport	
	Semera Airport	
	Bahir Dar Airport	
	Dembidolo Airport	

Two criteria have been selected, each expressed by a single variable:

- 1) the **Cost Effectiveness**, measured in the case of punctual infrastructures by a variable that divides the traffic units (passengers/years for Airports and Tons/year for dry Ports) at specific date (2050) by the Capex of the investment. These criteria reflect the importance of the investment from a transport point of view, together with the effectiveness of the Capex expenditure
- 2) the **Financial Internal rate of Return (FIRR)**, measured by the rate that financially equilibrates all the inflows and outflows that the investment will generate in its life cycle, and then reflects the ability of the

investment to be repaid over time with the revenues stream that generates. After a thirty years period of operation the final value is calculated by the value of the perpetuity coming from the net inflow of the last year. The monetary values are expressed in US Dollars, and this implies that the rate of return of each investment can be compared with the interest to be paid for a long-term loan in USD. This set of data will be also the basis of the Investment financing chapter.

After the quantification and transformation of all the variables in the ways above described, the calculated performance matrix is in the following table.

Table 55: Performance Matrix Calculated

Performance Matrix MCA	Criteria/Weight				
	Cost effectiveness	Q1	FIRR	Q2	Total Points
2025					
DRYPORTS		0,5		0,5	
Hawassa	0,056		0,350		0,203
Jimma	0,056		0,347		0,201
Assosa	0,056		0,186		0,121
AIRPORTS	-				
Shire Airport	0,309		0,341		0,325
2035	-				
DRYPORTS	-				
Yabelo	0,056		0,475		0,266
Gamela	0,056		0,237		0,147
AIRPORTS	-				
Jinka Airport	0,072		0,230		0,151
Hawassa Airport	0,915		0,887		0,901
Assosa Airport	0,244		0,440		0,342
Semera Airport	0,674		0,764		0,719
Bahir Dar Airport	1,000		1,000		1,000
Dembidolo Airport	0,506		0,558		0,532
2050	-				
DRYPORTS	-				
Weldia	0,056				0,166

Gondar	0,056				0,166
Gode	0,056				0,166

The ranking for each comparable time horizon are reported in the table below.

Table 56: Ranking per period

Performance Matrix MCA	Criteria/Weight					Ranking of the period
	Cost effectiveness	Q1	FIRR	Q2	Total Points	
2025						
DRYPORTS		0,5		0,5		
Hawassa	0,056		0,350		0,203	2
Jimma	0,056		0,347		0,201	3
Assosa	0,056		0,186		0,121	4
AIRPORTS	-					
Shire Airport	0,309		0,341		0,325	1
2035	-					
DRYPORTS	-					
Yabelo	0,056		0,475		0,266	6
Gamela	0,056		0,237		0,147	8
AIRPORTS	-					
Jinka Airport	0,072		0,230		0,151	7
Hawassa Airport	0,915		0,887		0,901	2
Assosa Airport	0,244		0,440		0,342	5
Semera Airport	0,674		0,764		0,719	3
Bahir Dar Airport	1,000		1,000		1,000	1
Dembidolo Airport	0,506		0,558		0,532	4
2050	-					
DRYPORTS	-					
Weldia	0,056				0,166	1
Gondar	0,056				0,166	1
Gode	0,056				0,166	1

It can be noted that both cost effectiveness and Financial internal rate of return show systematic advantage of the airports compared to the Dry Ports. This is mainly due to the fact that, while the dry Ports require an investment "green field", in the sense that they will have to be constructed from scratch, in the case of the selected airports the investments envisaged are of a "brown field" kind, as the Airports have already the air strip and the passengers

building, while the new investment are referred to the control towers and, in some cases, also in the navigation technologies. This circumstance reduces the marginal amount of money to be spent and qualify a clear priority for Airports.

Also, in this case it is useful to show the general ranking for all the punctual infrastructures investments.

Table 57: Overall Ranking

Performance Matrix MCA	Criteria/Weight					General Ranking
	Cost effectiveness	Q1	FIRR	Q2	Total Points	
2025						
DRYPORTS		0,5		0,5		
Hawassa	0,056		0,350		0,203	8
Jimma	0,056		0,347		0,201	9
Assosa	0,056		0,186		0,121	12
AIRPORTS	-					
Shire Airport	0,309		0,341		0,325	6
2035	-					
DRYPORTS	-					
Yabelo	0,056		0,475		0,266	7
Gamela	0,056		0,237		0,147	11
AIRPORTS	-					
Jinka Airport	0,072		0,230		0,151	
Hawassa Airport	0,915		0,887		0,901	2
Assosa Airport	0,244		0,440		0,342	5

Semera Airport	0,674		0,764		0,719	3
Bahir Dar Airport	1,000		1,000		1,000	1
Dembidolo Airport	0,506		0,558		0,532	4
2050	-					
DRYPORTS	-					
Weldia	0,056				0,166	10
Gondar	0,056				0,166	10
Gode	0,056				0,166	10

3.5.3 Sensitivity analysis

In this paragraph will be exposed the sensitivity analysis of the MCA, conducted with the scope of verifying how much the ranking of the "linear Infrastructures" is sensitive to a different weighting structure.

For this purpose, beside the base case, where each criterion has equal weight of 0,2, five

additional cases have been elaborated, each with a variable in turn that assumes a double weight (0,4) and the other variables with the same reduced weight at 0,15.

The results are reported in the table below:

Table 58: Results of the sensitivity analysis

	Base case	Cost Effectiveness 40%	FIRR 40%	FX 40%	External Cost 40%	Strategic Corridor 40%	Distance Between Max. and Minimum rank	Average distance
2025								
ROAD								3,7
Holeta - Ambo Expressway	3	1	3	3	3	6	5	
Alem Gena - Woliso Exp	4	3	5	4	5	3	2	
Dengengo - Harar	1	2	2	1	1	1	1	
Adama - Awash Junction	6	5	6	6	6	5	1	
RAIL								
Addis - Djibouti	2	4	1	2	2	2	3	
Awash - Kombolcha – Haragara	5	6	4	5	4	4	2	
Mekele – Haragaba	7	7	7	7	7	7	0	
2035								
ROAD								
Awash - Adaitu Exp.	5	5	6	1	6	3	5	
Awash - Dire Dawa Exp.	3	3	4	4	5	2	3	
AddisAbaba - Debre Brihan Exp.	2	1	1	3	4	5	4	
Addis Ababa - Commodo Abay River Exp.	4	2	2	5	7	6	5	
RAIL								
Weldiya - Assab Port Railway	6	6	5	6	3	4	3	
Mojo - Hawassa	7	7	7	7	2	7	5	
Hawassa - Woo - Moyle	8	8	8	8	8	8	0	
Dire Dawa - Berbera	1	4	3	2	1	1	3	
2050								
ROAD								
Awassa - Moyale Exp.	10	10	9	9	12	10	3	
Adaitu Mile Semera Galafi Exp.	3	4	4	1	5	1	4	
Alem Gena - Butajira Exp.	4	1	1	4	6	6	5	
Debre Brihan Mekelle -Eritrean Border Exp.	11	9	8	11	13	11	5	
Commodo Abay River -Bahir Dar Metema Exp.	7	5	5	8	10	7	5	
Ambo Nekemte Mekanajo Exp.	8	8	7	7	11	8	4	
Woliso Jimma Mizan Teferi Exp.	6	6	6	5	8	3	5	
Aposto - Bitata - Dolo - Somali Border Exp.	14	14	13	12	14	14	2	
RAIL								
Weldia - Wereta - Matema (Sudan Corridor)	12	12	11	13	9	12	3	
Wereta- Finote Selam	2	3	3	3	1	5	3	
Sebeta-Jimma-Bedele - Booma South Sudan	5	7	10	6	3	2	7	

Border								
Adama- Gasera	9	11	12	10	4	9	8	
Ejaji- Kurmuk	13	13	14	14	7	13	7	
Rejii - Holeta	1	2	2	2	2	4	3	

The sensitivity analysis shows results that authorizes to judge the calculation framework as enough stable.

In fact, on average, the ranking distance between the maximum and the minimum range that each investment has marked in the five simulations is 3,7. This means that for each simulation the average change of rank is less than of one position.

In particular, some investments show more robust results than others. For example, the

Mekele - Haragaba, that in the base case is the worst performer in the short-term investments group, remains in this position in all the simulations, and the best performer, the Degengo - Harar, remains in first position in three simulation and scores second in other two simulations. At the opposite, the rail line Adama - Gasera, that scores in ninth position among the investments in 2050 base case, ranges from the fourth to the twelve positions in different simulations.

3.6 INVESTMENT PROJECTS FINANCING

3.6.1 Introduction

The issue of how to fund the National Transport Master Plan is obviously a major one, and it will be approached from a double side:

- on one side it must be examined the recent macro-trends that characterize the choices of the Governments for the funding of infrastructure investments;
- on the other side it is opportune to recall the national Policies already declared and defined by the FDRE, in general terms and in the transport sector domain.

From the first side, it is evident how the Developing Countries in recent years leverage on infrastructure investment to support and accelerate the economic growth. At the same time, the need to limit the burden on National

Budget for the investment funding has implied the necessity to involve private capitals (national and international) in the investment process. This, in turn, has brought to the development of a multiplicity of schemes of Public Private Participation (PPP) as a significant component of the funding of new infrastructure investments. In the next paragraph an overview of the recent trends will be carried on.

For the second side, the Home-grown Economic Reform Plan, issued by the GoE, has defined a number of policies that will change, among other aspects, the approach to the funding of the public infrastructure investment programs. This approach will be examined in the paragraph that follows the next.

3.6.2 Recent experience in PPP and infrastructure Privatization

Public-Private Partnership or PPP is a model where the government and private investors, contractors, or companies come into a collaboration to undertake a public works project, wherein the rewards are shared between both the parties in a pre-decided ratio depending upon the risks and responsibilities undertaken by each of them.

Even though there is no strict definition of public-private partnership PPP and the nature of collaboration varies from country to country, the World Bank has come up with a broad categorization system, depending upon the degree of risk-sharing between the partners. This broad categorization provides a sample set of

various kinds of contracts that may fall under public-private partnership PPP.

#1 – Utility Restructuring, Corporatization, and Decentralization

The first types of public-private partnerships are the main aim of the government to improve the performance of the public service entity. It doesn't involve the sale of any of the government's stake, and the private partner is only involved in bringing efficiency to the operations of the service. For example, many airports in India have recently been handed over to private players for running the operations; however, the Airport Authority of India has not sold any stake to any private player.

#2 – Civil Works and Service Contracts

This agreement involves procurement of goods contracts that meet the standards set by the government authority or the repairs or services contracts for inspection and testing of public works projects and so on. It is more of bidding or tendering process in which several private players participate, and the best bid is awarded the contract. It is common for defence or healthcare industries, among others.

#3 – Management and Operating Agreements

These are mostly short term contracts (2-5 years) in which a private player is engaged in a fixed fee-based system to undertake certain tasks falling under the category of managing or operating a public project. It involves no asset transfer and is generally undertaken to try out private players before full privatization is undertaken so as to analyse the difference in the performance and come to a conclusion of whether or not privatization is an answer to the situation that needs betterment.

#4 – Leases/Affermage

Under leasing, the financing is not under the control of the private player, but the operation and maintenance are. Financing is from the government and, therefore, through the tax revenues. It doesn't allow a fixed fee for the private player like in the previous arrangement. The revenue generated when consumers consume the services are shared between the government and the private player, according to the ratio decided between them.

As this leads to the private player bearing greater risks, they have greater autonomy. At times the government's rent is fixed, so the risk of the collection increases for the private player because that is the source from which they pay back the government; therefore, the pricing is in the hands of the private player. Also, the agreement is for a longer-term (8-15 years).

Generally, Power and energy sector uses this form of Public-private partnership PPP.

#5 – Concessions, Build-Operate-Transfer (BOT), Design-Build-Operate (DBO)

These are long term in nature, and it gives the private player the freedom of investment or sourcing financing. Therefore, greater autonomy when compared to leases. Ownership is still with the government, and therefore BOOT agreements are out of the scope here as they expand to Build own operate and Transfer.

Such contracts are popular in the construction industry. In concessions, the revenue stream for the private player is tied up to the consumer, while in BOT, the revenue comes from the authority.

In DBO, however, the financing is also in the hands of the authority; however, before the transfer, the private player needs to achieve a certain level of output to prove to the authority of feasibility of the project, and therefore the financial risk is quite high.

#6 – Joint Ventures and Partial Divestiture of Public Assets Full Divestiture

In this, a new company is established. It could also be in the form of a partnership. Here all the players have the same set of responsibilities and the same set of risks to bear; however, the degree varies based upon the reward ratio. Each player has some level of ownership in the project and a profit-sharing ratio. At times the government keeps some degree of control with itself for the prevention of excessive profiteering by the private players; however, there is a share in the ownership for all the players.

#7 – Full Divestiture

Here the last types of public-private partnership PPP end in a way because this leads to complete transfer of control and ownership to private players. There can be two ways of achieving this, either the government sells shares or the assets of the project at hand. However, in the transition period, the government may still operate the project till the time the private player comes to terms and get the hang of it.

In 2004, investment flows to infrastructure projects with private participation in developing countries grew for the first time since 2000 to reach \$64 billion. However, the analysis shows that the growth was driven by the telecommunications sector which accounted for \$45 billion. All developing regions, apart from Sub-Saharan Africa, experienced increased investment in telecommunications. Within the telecommunications sector, independent mobile operators attracted about 50% of sector investment.

Proceeds from infrastructure privatization in developing countries grew in recent years, rising from 48% of the total in the 1990s to 55% in 2000–2003.

East Asia and the Pacific raised twice as much in privatization proceeds in 2000–2003 as in the 1990s (\$66 billion from 420 transactions). The

People's Republic of China (PRC) alone accounted for nearly 90% of the proceeds in the region in 2000–2003, compared with 50% in the 1990s. PRC's stock market offerings in telecommunications and energy made it the top revenue earner among all developing countries in 2000–2003.

Greenfield projects accounted for 56% of total investment flows and 60% of projects in 2001–2004. These are the most common form of privatization/PPP across infrastructure sectors, except in water where concessions are still the preferred form. Greenfield projects are also the most common in developing regions—except in Europe and Central Asia, where divestitures are still preferred.

Greenfield projects predominated in developing countries, particularly in lowest income countries, based on data for 1990–1999. They constituted 65% of projects in low-income countries compared with 37% for developing countries, reflecting the low starting base of infrastructure in developing countries.

After the global slowdown in PPPs in the late 1990s, preference for low-risk contracts increased. Management contracts became more common, increasing from 2% of projects in 1990–2000 to 7% in 2001–2004 (based on the World Bank's PPI Project Database). They grew in number in all regions and sectors, but most were for water projects. The share of lease contracts remained at 2% of projects in both periods.

Fourteen lease contracts were implemented in 2001–2004. In contrast, divestitures and concessions declined as a share of both investment flows and projects. Most investment flows to divestitures in 2001–2004 went to projects that had reached financial closure in the 1990s. New divestitures were limited to East Asia and Europe and Central Asia by 2003–2004.

Privatization/PPPs have reached nearly all developing countries, generating more than \$400 billion in proceeds in 1990–2003. Activity peaked in 1997 then declined but was reactivated in 2001. Proceeds are concentrated in a small group of countries. Five countries - Brazil, PRC, India, Poland, and Russian Federation - accounted for more than 40% of proceeds in 1990 - 2003.

Infrastructure (telecommunications; electricity generation, transmission, and distribution; natural gas transmission and distribution; transport; and water) accounted for half of privatization/PPP proceeds in developing countries in 1990–2003. These sectors were followed by the competitive sectors (manufacturing, services, tourism, and other firms), energy (production of oil and gas, other hydrocarbons, and petrochemicals), finance, and the primary sector (minerals and metals) in terms of revenue generated.

The next table summarizes the flow of investment to developing countries both by sector and by region.

Table 59: Investment in infrastructure projects with Private participation in Developing Countries

	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
Sector										
Energy	21,7	30,0	46,3	29,3	21,1	27,4	15,6	19,2	17,6	12,7
Electricity	18,2	27,4	43,3	23,3	18,3	24,9	14,1	10,3	14,7	12,1
Natural Gas	3,6	2,6	3,0	6,1	2,7	2,5	1,5	8,9	2,9	0,6
Telecommunications	17,2	24,6	39,9	51,8	36,1	48,9	45,2	33,0	33,2	45,0
Transport	8,2	15,7	19,4	17,5	8,2	9,1	8,1	3,6	5,0	4,5
Water and Sewage	1,5	1,7	8,4	2,2	6,5	4,8	2,4	2,0	1,4	1,9
Region										
East Asia and Pacific	18,8	28,0	34,9	9,7	13,1	14,3	11,0	9,7	13,0	8,7
Europe and Central Asia	8,1	10,5	14,2	12,1	9,4	25,0	12,3	16,8	12,2	12,5
Latin America and the Caribbean	17,1	25,8	49,3	71,2	37,3	38,7	33,7	19,6	15,8	17,4
Middle East and North Africa	0,1	0,3	5,1	3,1	3,0	4,1	4,4	1,6	6,2	10,9
South Asia	3,8	5,8	6,3	2,3	4,6	4,4	4,6	6,0	3,4	9,6
Sub-Saharan Africa	0,8	1,7	4,3	2,5	4,6	3,7	5,3	4,2	6,5	4,9
Total	48,7	72,1	114,1	100,9	72,0	90,2	71,3	57,8	57,0	64,1

3.6.3 FDRE policies for the participation of the Private Sector

The "Homegrown Economic Reform Plan", takes a comprehensive approach to addressing imbalances and rebalancing growth, with three pillars:

- macroeconomic and financial sector

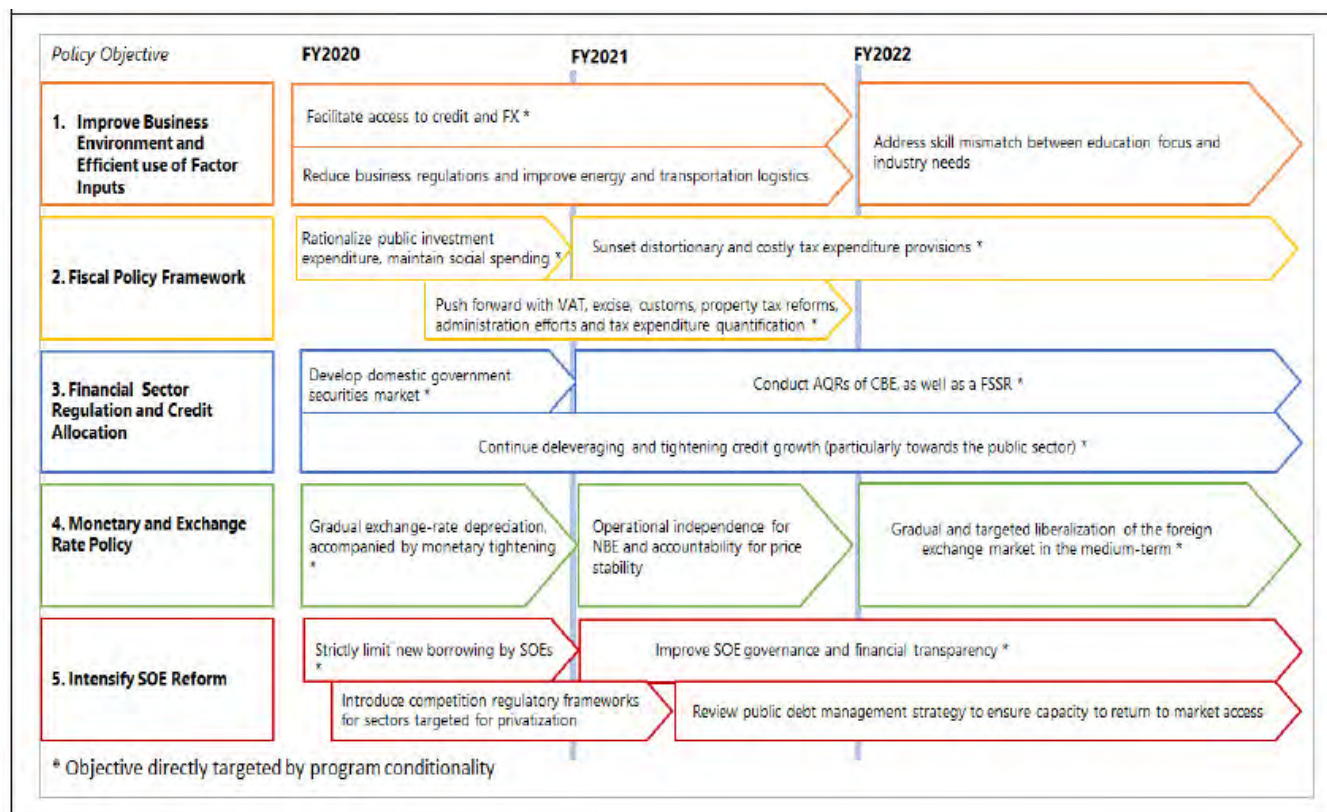
reforms to correct FX imbalances, control inflation, safeguard financial stability while promoting intermediation, and ensure debt sustainability.

- structural reforms to ease institutional and

structural bottlenecks to productivity and job growth, and

- sectoral reforms to address institutional and market failures in key strategic sectors.

Figure 28: Ethiopia- Reform complementarities in Program Design and Sequencing



Source IMF

A particular attention must be devoted to the line n. 5: "Intensify SOE Reform", for the effect that this can have on the major players as investors in the transport arena.

The authorities have started reforming the sector to curb debt levels, limit fiscal risks, improve transparency and oversight, and where appropriate, embark on privatizing these enterprises. In particular, the authorities have:

Tightened controls on new debt. To limit debt accumulation and control fiscal risks, the Ministry of Finance introduced the 2017 Public Debt Management and Guarantee Issuance Directive to tighten controls over the contracting of new debt and limit government guarantees. Further, the authorities instituted a policy of zero new external non concessional borrowing and have sought debt reprofiling on external debt with official bilateral creditors. These efforts have successfully allowed them to rein in borrowing and bring down the public debt-to-GDP ratio.

Privatization. The authorities have embarked on an ambitious privatization program starting with the telecom and sugar sectors, including opening them to competition. Their broader plan is to

transform and partially privatize strategic SOEs, fully divest non-strategic SOEs and improve the regulatory environment for SOEs. The partial privatization of Ethio-Telecom and expected issuance of additional licenses are expected to enhance efficiency and improve telecom services.

Strengthen governance and management of key SOEs. In support of the SOE reform, authorities have revised the Public Enterprise Proclamation and established a supervisory authority, PEHAA. The new law, that will establish SOE governance structures and policies, financing, debt management, performance management, transparency and disclosure requirements, is in the approval pipeline.

In 2017 the FDRE had already issued the Public-Private Partnership Policy. In it you can read:

The government understands the need for mobilizing resources from different sources other than the traditional government financing in order to meet the growing demand for public services. Particularly, involving the private sector in partnership with the government has been used by governments to fill the gap in infrastructure financing. Public Private Partnership (PPP) is used

as one of the tools to improve infrastructure services and if appropriately utilized gives the opportunity to use the private sector investment potential as required.... It is oblivious that taking PPPs as an option to ensure infrastructure provisions is new for Ethiopia. And hence it is important that a focus is given to few infrastructure projects carefully chosen as test at the first few years...

Objectives for the Use of PPPs

The objectives for the use of PPPs to support the implementation of individual projects are two-fold:

- To increase the financial resources available for the development and delivery of infrastructure services in Ethiopia through leveraging private sector investment and management; and,
- To capture the benefits of private sector involvement in infrastructure development through the alignment of public and private sector incentives and the use of appropriate risk transfer, where such benefits exist. These benefits may include, but are not limited to, the following:
 - Innovations in design or service delivery approach;
 - Reduction in project delays and cost overruns;
 - Implementation of a life-cycle approach to infrastructure service costing;
 - Improved quality or efficiency;
 - Knowledge transfer to local private sector; and,
 - Increased asset utilization.

The Public Private Partnership matter was in 2018 regulated by the Proclamation No 1076-2018 (Directive issued to implement Public Private Partnership). The PPP model established under the Proclamation aim at: i) create a favourable framework for privately financed projects; ii) enhance transparency, fairness, Value for Money, efficiency and long-term sustainability of the projects; iii) improve quality of Public Service Activity; iv) maintain macroeconomic stability by reducing growth in public debt. A specific Board is established (PPP Board), chaired by the Minister of Finance and under the supervision of a MoF Directorate with the main task to approve all the PPP projects and to revise the risk allocation of previous approved projects.

The proclamation, at the article 12, states that "The Board shall consider the following in approving

any project for implementation as a PPP in accordance with Article 16 of the Proclamation:

- a) Whether the project is consistent with Ethiopia’s development objectives;
- b) Whether there is sufficient demand for the project outputs;
- c) Whether the project is expected to be able to transfer meaningful and appropriate risks to a private sector partner;
- d) Whether a project is likely to deliver Value for Money;
- e) Whether sufficient financial resources, including those required for expected Government Support, are expected to be available for the project; and,
- f) Whether the Contracting Authority has sufficient capacity and resources to appropriately prepare and implement the project."

The status of the progresses done by the PPP Directorate General has been published in March 2021.

In this regard the Ministry of Finance, (PPP Directorate General), has taken the initiative to implement 1050 Mw of solar power, 1848Mw of Hydro power, 710Mw of Wind power and 297 km toll road project, Affordable house project and Petroleum depot project in PPP modality.

Five contracting authorities, Ethiopia Electric Power (EEP), Ethiopia Roads Authority (ERA), Federal Housing Corporation, Ethiopia Petroleum Supply Enterprise and Ministry of Health have been identified as contracting authority for the above referred project as per the existing PPP policy and proclamation.

In relation to this, as of March 2021 the PPP Board approved Twenty-three (23) PPP pipeline projects which include eight solar photovoltaic projects, six hydro-power projects, three toll road projects, five wind power projects, one Affordable Housing Development project, and one Petroleum Storage Depot project.

Two solar PV projects are awarded to the winner Private developer and the rest six (6) solar PV projects are on the request for proposal (RFP) stage. The other projects will be tendered after conducting the necessary studies.

The three-toll road project under scrutiny by the Board are the following.

Adama Awash Expressway

Project Tide/Name	Adama Awash Expressway
--------------------------	------------------------

Contracting Authority	Ethiopian Roads Authority
Project Description	The section from Adama to Awash. a total of 1251(m. were planned to be upgraded to expressway standard. Part of this section (601(m) of the road is planned to be constructed as a toll road from the public money borrowed from the Africa Development Bank. The remaining section (65Km) of the road up to awash is identified to be developed by the private sector through PPP
Approximate Cost	\$226 million
Procurement Mode	Competitive bidding
The PPP Proposed Structure: (e.g. Concession_ BOT. DBO, Management and Operating etc.)	BOT(DBFOM)
The Proposed partnership period	25-30 years
Region Area	Oromia Regional State
Sector: (i.e. Transport. Energy. etc.)	Transport
Current Status : (i.e. feasibility. under evaluation. bidding stage etc.)	Feasibility study is undergoing.

Awash-Mieso Expressway

Project Tide/Name	Awash-Mieso Expressway
Contracting Authority	Ethiopian Roads Authority
Project Description	The section of the road stretches from Awash to Mieso. a total of 72Km. The road is planned to be upgraded to expressway standard by the participation of the private sector through PPP
Approximate Cost	200 million USD
Procurement Mode	Competitive bidding
The PPP Proposed Structure : (e.g. Concession_ BOT. DBO, Management and Operating etc.)	BOT(DBFOM)
The Proposed partnership period	25-30 years
Region Area	Oromia Regional State
Sector: (i.e. Transport. Energy. etc.)	Transport
Current Status : (i.e. feasibility. under evaluation. bidding stage etc.)	Feasibility study is undergoing

Mieso-Dire Dawa Expressway

Project Tide/Name	Mieso- Dire Dawa Expressway
Contracting Authority	Ethiopian Roads Authority
Project Description	The section of the road stretches from Mieso to Dire Dawa. a total of 160 Km. The road is planned to be upgraded to expressway standard by the participation of the private sector through PPP
Approximate Cost	445 million USD
Procurement Mode	Competitive bidding
The PPP Proposed Structure: (e.g. Concession_ BOT. DBO, Management and Operating etc.)	BOT(DBFOM)
The Proposed partnership period	25-30 years
Region Area	Oromia and Somali Regional State
Sector: (i.e. Transport. Energy. etc.)	Transport
Current Status : (i.e. feasibility. under evaluation. bidding stage etc.)	Feasibility study is undergoing

As it can be seen, the three of them are hypothesized with a PPP proposed structure of BOT- Build, Operate and Transfer.

All of them being in phase of feasibility study, it is not yet available a specific standard to be used to examine the main investments of the present Masterplan.

3.6.4 The evaluation of the eligibility for PPP of the major projects.

As is it clearly stated in the proclamation, three of the conditions to consider eligible a project for a PPP financing are:

- Whether there is sufficient demand for the project outputs;
- Whether a project is likely to deliver Value for Money;
- Whether sufficient financial resources, including those required for expected Government Support, are expected to be available for the project.

It is obvious that the private sector will exercise their freedom to decide if to invest or not in accordance, first of all, with the expected profitability of the project as such. Then the public powers can alter the objective profitability of the project, for example granting subsidies, in order to boost the attractiveness of the project for the potential investor.

The profitability of the project is captured by the variable "Financial internal rate of return", that is the rate that equilibrates the outflows of the project (Capex and Opex) with the inflows (revenues from the tolls for the expressway and revenues from the passenger tickets and from freight tariffs for the railways).

The way to evaluate preliminarily the eligibility of a project to be specifically studied to offer to the private investors as a PPP opportunity is the one to compare the FIRR of the project with the expected cost of capital of the private investor for the specific investment. In this sense the cost of capital is a "Threshold Value" that is able to discriminate if the project is eligible or not.

The standard methodology to evaluate the cost of capital of international investors on long term investments (as the transport infrastructure are) is to calculate the long-term Country equity risk premium, which is equal to the sum of the mature markets' equity risk premium (S&P 500) and the Country risk premium⁶³.

In the following table it is reported the value of the long-term Country equity risk premium and the Country risk premium from Ethiopia at different dates.

⁶³ Damodaran, Aswath, Equity Risk Premiums (ERP): Determinants, Estimation and Implications – The 2016 Edition (March 5, 2016). Available at SSRN: <https://ssrn.com/abstract=2742186>.

Table 60: Long term Country equity risk premium and Country risk premium for Ethiopia

Country: Ethiopia	Long term Country equity risk premium	Country risk premium
February 27, 2018	10,27%	5,19%
July 5, 2020	10,67%	6,29%
January 5, 2022	13,14%	8,90%

Source: Stern University, NY

As it can be seen on the table, the long-term Country equity risk premium has reached a high value (13,14%), due to the recent increase of the Country risk premium component of the rate.

Nevertheless, in the framework of the Go-Ahead Scenario, it is possible to interpret the recent high value as a short-term peak. Consequently, in order to choose the threshold value for infrastructural project that will have their birth in a time span of thirty years, a prudent choice is to use the average of the 2018 and 2020 values. This brings to the rate of **10,47%**, that will be assumed in the following analysis as "threshold Value".

In the following paragraphs there will be an evaluation of the eligibility for PPP of the major investment project of the ETMP.

For each of these projects the methodology requires:

- To be able to estimate the capital expenditures to build, maintain or enlarge the investment on a yearly base
- to define a business case, in the sense of specifying a list of activities/services managed and sold as a business in entrepreneur logic, each with its volume, selling price and cost of production
- to be able to derive the volumes of activity for each investment by the traffic flows coming from the model.

3.6.5 The evaluation of the eligibility for PPP of the Expressways

The evaluation of the profitability of the 16 expressways included into the Ethiopian National Masterplan in the base scenario (Go-Ahead Scenario) has been conducted under the hypothesis that these expressways would be managed as toll road. The Capex considered are the full amount of investment coming from the calculation of each expressway, while the opex express the operation and maintenance cost, evaluated on the basis of the length of the road. The revenues are the tolls that come from a tariff

These two conditions restrict the range of investment that can be evaluated as eligible, as it excludes the investments that cannot be seen as a business in itself. The kind of investments that will be evaluated are then the typical infrastructure businesses: management of Expressways, Management of railway lines, management of airports and management of dry-ports.

Each business has been focused in its specific institutional and market framework and a thirty-year business plan has been drawn, with specification of yearly Capex, Opex and Revenues. At the end of the thirty years period a final value has been calculated, in terms of present value of a perpetuity equal to the operation margin (revenues minus opex) of the last year.

Once obtained all the yearly financial flows related with the investment, the Financial Internal rate of Return (FIRR) has been calculated as the rate that expresses the profitability of the business coming from the investments. This FIRR rate is the one to be compared with the threshold value, that expresses the expected cost of capital, to judge the eligibility of the investment for a PPP initiative.

In total 44 investments/business cases have been plotted and evaluated, and in particular 16 Expressways, 13 Railway Lines, 7 National Airports and 8 Dry-ports.

that is the one proposed into the study for the Diredawa Dewelle tariff, that is broadly coincident with the one existing Addis-Adama expressway. Considering the expected traffic composition of the seven vehicles categories, the average tariff has been calculated in 1,14 ETB per vehicle km.

The financial internal rate of return of the sixteen toll roads is the following:

Table 61: Financial Internal rate of return for Major Expressways

	FIRR %
2025	
Holeta - Ambo Expressway	7,9
Alem Gena - Woliso Exp	5,4
Dengengo - Harar	2,3
Adama - Awash Junction	3,2
2035	
Awash - Adaitu Exp.	-2,2
Awash - Dire Dawa Exp.	1,9
AddisAbaba - Debre Brihan Exp.	7,4
Addis Ababa - Commodo Abay River Exp.	6,6
2050	
Awassa - Moyale Exp.	7,1
Adaitu Mile Semera Galafi Exp.	4,2
Alem Gena - Butajira Exp.	12,8
Debre Brihan Mekelle -Eritrean Border Exp.	7,7
Commodo Abay River -Bahir Dar Metema Exp.	9,9
Ambo Nekemte Mekanajo Exp.	7,6
Woliso Jimma Mizan Teferi Exp.	5,6
Aposto - Bitata - Dolo - Somali Border Exp.	-0,1

Out of the 16 major road infrastructures, just one have a profitability that exceeds the threshold value of 10,49%:

- the AlemGena - Butajira Expressway, with a length of 114 km and an investment (upgrading to four lanes) of 279,33 million USD, that shows an IRR of 12,8 %;

This is a significant outcome, that expresses the typical difficulty of the transport infrastructures to be eligible for PPP funding.

Nevertheless, several expressways are not far from the threshold value, and this implies that with some appropriate adjustment, they could arrive beyond the threshold of eligibility.

It must be considered that the toll revenues forecasted are the ones that come out from the

calculation of the expected transits (as per the transport model forecast) with the tariffs that have been applied since 2017 for the Addis – Adama Expressway.

It has been considered the hypothesis to raise the yearly revenues of 65%. This increase is not unrealistic, if we consider that the same tariff is in place since 2017 and that between 2014 and 2017 it was increased of 19,2%. As an alternative to the raising of the highway tariffs it can be also imagined a mix of tariff increase and a public subsidy granted to the private operator by the contracting Authority. The appropriate mix could be of 30% of price increase and a subsidy corresponding to a further 35% price increase, as a shadow price. The results of this simulation are contained in the following table.

Table 62: Financial Internal rate of return for Major Expressways: Raised tariffs/Subsidy granted case

	FIRR %
2025	
Holeta - Ambo Expressway	11,3
Alem Gena - Woliso Exp	8,1
Dengengo - Harar	4,9
Adama - Awash Junction	6,1
2035	
Awash - Adaitu Exp.	0,2
Awash - Dire Dawa Exp.	4,6
AddisAbaba - Debre Brihan Exp.	10,5
Addis Ababa - Commodo Abay River Exp.	9,9
2050	
Awassa - Moyale Exp.	10,2

Adaitu Mile Semera Galafi Exp.	6,9
Alem Gena - Butajira Exp.	17,1
Debre Brihan Mekelle -Eritrean Border Exp.	10,9
Commodo Abay River -Bahir Dar Metema Exp.	13,5
Ambo Nekemte Mekanajo Exp.	10,8
Woliso Jimma Mizan Teferi Exp.	8,5
Aposto - Bitata - Dolo - Somali Border Exp.	2,2

In this hypothesis the situation is slightly changed: the eligible projects for PPP funding, as exceeding the threshold value of 10,49% become six and specifically:

- the Holeta-Ambo Expressway, of 85 km and 203 million USD of investment, that reaches a FIRR of 11,3 %
- the Addis Ababa-Debre Birhan Expressway, of 130 km and 310 million USD of investment, that reaches a FIRR of 10,5%.
- the already eligible AlemGena Butajira Expressway, of 114 km and 279 million USD of investment that increases its FIRR to 17,1%;
- the Debre Birhan- Mekelle- Eritrean

Border Expressway, of 792 km and 1891 million USD of investment that reaches a FIRR of 10,9%

- the Commodo Abay River- Bahir Dar Metema Expressway, of 656 km and 1566 million USD of investment, that reaches a FIRR of 13,5%
- the Ambo- Nekemte-Mekanajo, of 410 km and 979 million USD of investments that reaches a FIRR of 10,8%

These six projects, if financed via PPP in accordance with this hypothesis, would allow a very significant saving of public funds, reaching 5,228 Billion USD, even though partially re-invested in current subsidies granted.

3.6.6 The evaluation of the eligibility for PPP of the Railway lines

The business case of the integrated railways is well known: the capex are the investments to build the infrastructure plus the investments to procure the rolling stock (locomotives, passengers' cars, sleeping cars, freight wagons of different shape and function). The Opex are the cost to maintain the line and the rolling stock plus the cost to operate the trains. This cost is obviously related to the quantity of trains needed to carry all the forecasted traffic. The revenues come from the forecasted traffic for passengers

and for freights, given the passengers and freight tariffs.

The evaluation of the profitability of each railway line has required then to build a calculation model. The results are shown in the present paragraph. In the following table it is reported the Financial Internal Rate of return of the 13 railway lines included into the Ethiopian National Masterplan in the base scenario (Go-Ahead Scenario).

Table 63: Financial Internal rate of return for the Railway Lines

	FIRR	
	%	Corrected %
2025		
Addis - Djibouti	35	9,90
Awash - Kombolcha – Haragaria	10	0,50
Mekele – Haragaba	-1	-1,50
2035		
Weldiya - Assab Port Railway	1	
Mojo - Hawassa	-2	
Hawassa - Woo - Moyle	-2	
Dire Dawa - Berbera	2	
2050		
Weldia - Wereta - Matema (Sudan Corridor)	4	
Wereta- Finote Selam	4	
Sebeta-Jimma-Bedele - Booma South Sudan Border	2	

Adama- Gasera	-4	
Ejaji- Kurmuk	-2	
Rejii - Holeta	5	

The first column of the table (FIRR) is calculated considering only the future financial flows of the investment. In the second column (FIRR Corrected) the FIRR has been corrected, for the three rail lines that are under construction (Hawash – Kombolcha - Haragaria and Mekkele-Aragaria) or under operation even if still requiring additional investments (Addis-Djibouti), in order to take into account the Capex already spent into the construction of the infrastructure or the procurement of the rolling stock. This to evaluate unitarily the infrastructure, that is the way they should be considered for an eligibility in a PPP program, and also to show homogeneous data to compare the performance of different lines.

The situation for the railway lines in terms of eligibility for PPP is, as known, far more complex than the one of the expressways.

None of the 13 railway lines has a profitability beyond the threshold, and five have a negative rate of return. Additionally, the most profitable (FIRR corrected at 9,9%) is the Addis-Djibouti line, that for its nature is not eligible to be privatized, being an international line built and operated under a bilateral agreement between the two Governments.

The limited profitability of the railway lines, once considered the full cost of the investment, is not a surprise: almost everywhere in the world, if the privates are involved in railways investments, they will receive some sort of gratuity or financial compensation by the public side.

It is possible to envisage two alternative institutional schemes that could be compatible with an involvement of privates in the investment and management of the railways:

- the first one, that can be called “Classic Concession”, is under a BOT scheme, where the private doesn’t finance all the line, but just some components of the construction, while the public party bears the remaining part of the investment;
- the second one, that can be called

“railway Undertaking” hypothesizes an unbundling of the railway operations, with a public infrastructure manager and one or more privates that run the transport business based on an open access principle, pay an access fee and invest directly in the rolling stock.

It must be underlined that the first scheme is the one that has been used in Europe in the nineteenth century to support the first development of the railways (here the name of Classic Concession). In particular, the State, as a Concessor, would have defined the alignment and built at its own expenses the permanent way and the civil works, while the private, as a Concessionaire, had the role to build at its expenses the track works, the signalling, and eventually the electrification of the line, to invest in the rolling stock and to run the business, in regime of legal monopoly. This scheme has been recently revitalized in countries where the railway know-how is not so strong. For example, under this scheme the Government of Egypt is developing its “Green line project”, that is a 600 km High Speed line connecting Mediterranean and Red Sea. The concessionaire, a consortium led by Siemens AG, will manage all the high-speed technologies, to be installed over a permanent way build by the state with national companies.

The investment in permanent way and civil works is a percentage of the total infrastructure construction budget ranging from the 60 to the 80%, in accordance with a minor or a major density of tunnels and viaducts (that in turn depends on the orography of the territory), so the private would have to invest -on average- the remaining 30% of the infrastructure cost (for tracks, signals and electrification), plus to pay all the investment in rolling stock required by the traffic.

Under these assumptions a simulation of the financial IRR of the hypothetic private Concessionaires has been conducted. The results are shown in the following table.

Table 64: Financial Internal rate of return in case of “ Classic Concession”

	FIRR %
2025	
Addis - Djibouti	79
Awash - Kombolcha – Haragaria	16
Mekkele – Haragaba	4

2035	
Weldiya - Assab Port Railway	7
Mojo - Hawassa	4
Hawassa - Woo - Moyle	3
Dire Dawa - Berbera	7
2050	
Weldia - Wereta - Matema (Sudan Corridor)	10
Wereta- Finote Selam	9
Sebeta-Jimma-Bedele - Booma South Sudan Border	7
Adama- Gasera	0
Ejaji- Kurmuk	3
Rejii - Holeta	11

As it can be seen by the figures shown in the table, in this configuration the only line that is beyond the threshold is the Rejii-Holeta, with a FIRR of 11%. The other two lines beyond the threshold- Addis Djibouti and Awash-Kombolcha- are not eligible because most of the investment has been already disbursed.

The second institutional scheme, the one called "Railway Undertaking", is the one that is compatible with the liberalization of the railways transport, which is one of the options that are under consideration in the present debate for the railways reform. The hypothesis is that there is the unbundling between the infrastructure manager, a public entity that builds the lines and operates and maintain the infrastructure, and a number of private or public railway undertakings, that compete each other offering transport services for passengers and/or freights with

rolling stock procured and paid by them. The right to access to the line by the Railway undertaking is obtained by the payment to the railway undertaking of an access fee for the use of the infrastructure. The access fee can remunerate the costs for infrastructure operations (train dispatching) and ordinary and extraordinary line maintenance, but not to repay the initial investment of the line building, that remains economically in charge of the public party. This is the scheme adopted by many European railways, included Italy.

The profitability for the Railway undertakings that have invested on the rolling stock to operate the lines is shown in the following table, under the hypothesis that the competition doesn't change the tariff level, that is the one observed in the Addis- Djibouti line.

Table 65: Financial Internal rate of return for the "Railway Undertaking"

	FIRR %
2025	
Addis - Djibouti	302
Awash - Kombolcha – Haragaria	19
Mekele – Haragaba	12
2035	
Weldiya - Assab Port Railway	32
Mojo - Hawassa	19
Hawassa - Woo - Moyle	30
Dire Dawa - Berbera	30
2050	
Weldia - Wereta - Matema (Sudan Corridor)	31
Wereta- Finote Selam	30
Sebeta-Jimma-Bedele - Booma South Sudan Border	31
Adama- Gasera	13
Ejaji- Kurmuk	20
Rejii - Holeta	31

Under this scheme all the lines are attractive for the private investors.

The investments on the private party, as said, are limited to the rolling stock, and this mobilizes private investments for the thirteen lines that for

the thirty years period of the masterplan reaches the amount of 3,3 Billion USD.

To support it, anyhow, the public party must build (or complete the building) the thirteen lines

without return on the initial investment, for a total amount of 23,1 Billion USD.

3.6.7 The evaluation of the eligibility for PPP of the Aviation projects.

PPP is a powerful mechanism to increase the quality, efficiency, and competitiveness of public services. It can supplement limited public sector capacities and provide an additional sources of finance where budgetary restrictions may limit the development at local level. The best use of private sector operational efficiencies can increase quality to the public and the ability to speed up infrastructure development.

One element that in developing PPP projects must be kept under control of the Civil Aviation Authority is the responsibility for safety, security and economic oversight of air navigation services providers (ANSPs) as highlighted by ICAO⁶⁴.

In order to identify potential opportunities to develop PPP financing schemes within the aviation sector it is important to understand in which kind of framework such activities would be launched within the industry.

In particular, PPP financing schemes become attractive for investors in a liberalized market where the conditions are stable enough to guarantee long term time span that will make the investments being fully deployed in order to reach the planned outcomes and financial returns. Ethiopia is a country that in the last decade has offered good stability conditions among other African countries and enjoyed high GDP growth rates. If the recently introduced aviation liberalization is implemented with a steady pace, then the market will become increasingly attractive for investors who want to engage in PPP financing in aviation projects, be it air transport or ancillary business initiatives. In our view a monopoly industry asset is not an attractive one. Investors, in fact, assess potential attractiveness of opportunities based on financial return on investments in the long term from business that may enjoy growth opportunities in open markets.

PPP financing can be developed by involving government owned organizations such as EAG but especially by attracting the private sector operators who want to either grow their existing activity in the aviation industry or start new aviation business related projects.

Potential areas for PPP projects are:

- Domestic airports for all what relate to concessions for construction, enhancement, refurbishment of the facilities to serve air transport operators who provide services for passenger; freight, aerial services including land control and protection, maintenance, logistics, technical activities, etc.;
- Supply of vehicles for mobility of people and goods within airports;
- Supply of aircraft;
- Supply of drones, helicopters, air balloons;
- Supply of different types of aviation industry equipment at airports, landside and airside;
- Development of food and other travel related service outlets within airports;
- Development and management of parking areas within or nearby airports.

As emphasized by Airports Council International (ACI) World, governments and regulators should facilitate appropriate private investment in airports since it has proven to help deliver strong traffic growth, significant increase in capital expenditure, and improvement in service quality in airports around the world. Investment in airport infrastructure is critical to the global economy and global connectivity, and if governments are unable to make the required levels of investment, other sources such as PPP must be tapped to accommodate traffic growth. In ACI's view, privatization should be considered as a valid option to address shortcoming in existing airport infrastructure and to invest in future capacity and service quality improvement. In particular, when the legal framework is clear, and investor-operators are able to exercise business innovations to try to make returns on the risks they take, private investment has been successfully used to contribute to national economic growth and enhance the passenger experience.

All the potential areas for PPP development listed above are suggested on the assumption that the aviation sector liberalization will be fully implemented to open new spaces of business opportunity for a potential wide range of private

⁶⁴ Doc 9082 - ICAO's Policies on Charges for Airports and Air Navigation Services - Section I, para. 6 refers.

investors and operators who aim at investing in the aviation industry and related services. Should the process be significantly delayed or stop for any reason, a potentially doubtful image would arise and it would be very difficult to keep attracting investors from the international community to partner with Ethiopian institutions and operators.

Being able to attract the private sector to invest in the aviation sector development is important to create a new stream of initiatives in different areas and also focused at local level in the regions across the country. The more the country recovers from the pandemic and the many uncertainties that may keep foreign investors away, the more it will be possible to attract resources to support the development of new business projects also using PPP initiatives. A great part in this process will be played by the recovery of international tourism flows over the next years and the ability to support the development of internal tourism demand from Ethiopian residents.

According to ACI⁶⁵, airports that have some form of private sector participation handled almost 45% of global passenger traffic in pre-pandemic times. Based on the most recent ACI estimates (before the pandemic), Europe and Latin America-Caribbean handle the highest proportion of passenger traffic held by airports with private sector participation at 75% and 66% respectively. Airports with private investment or privatized airports do not follow one standard model, but there are many different models across the world also according to the local laws and regulations. There are many types of privatizations in terms of both direct investment levels and duration. In some cases, management contracts by specialized airport management companies are in place with no equity or capital directly invested in airports. Other models may involve airport operators entering longer term concessions spanning decades with governments and are known as the Build-Operate-Transfer (BOT) models. And PPP schemes are also in place where private operators are given partial ownership of airport infrastructure or full private ownership. It is therefore not possible to suggest a one best model to follow for the development of aviation PPP projects in Ethiopia.

For what aviation is concerned, the 10 Years Perspective Development Plan (2013-2022) lists

several projects in relations to airports in Ethiopia for which the Plan identifies investments expenditures (capex) aimed at upgrading the national infrastructure. The investments for aviation infrastructure elements assigned to the ECAA are divided in three groups a) Aerodrome projects, b) New projects to star, c) Projects on design and research stage. In total the list is for 24 different projects for which the amount of the investments identified in the Plan is just over 2 billion Birr.

PPP development for aviation sector has been included as one of the declared objectives of the Ministry of Transport of Ethiopia. In March 2021, at the Ethiopian Transport Investment Summit, aviation was listed as one of the sectors for which to activate and develop PPP and Joint-Venture projects for the future development of air transport at national level. The synthesis of the MoTL identified areas for development within aviation are illustrated in the next figure.

⁶⁵ The Bare Bones – The Economics of airport infrastructure amidst the pandemic <https://blog.aci.aero/the-bare-bones-the-economics-of-airport-infrastructure-amidst-the-pandemic/>

Figure 29: Aviation services development projects⁶⁶



Location: - To upgrade the existing air transport and aviation sector of Ethiopia towards making the country major aviation hub in the world.

Modality: - JV

Estimated Cost: - Depends on the type and scope of investment,

- Minimum Requirement: USD 200,000.00 capital for a single investment project

Projects:

- Freight transport with a capacity up to 25 (twenty five) tones;
- Domestic air transport services;
- International Air transport services (Joint Investment with the Government);
- Aviation Academy;
- Air Ballooning;
- Aerial Services including Agricultural Spray;
- Aviation Consultancy;
- Supplying Aircraft Spare parts , Equipment & Accessories

⁶⁶ Ethiopian Transport Investment Summit, Addis Ababa, March 24th, 2021.

Analysis of potential investment projects for PPP development in the Ethiopian aviation sector has been carried out on the base of international benchmarks for airports that represent the key aviation infrastructure in the country.

According to Airports Council International (ACI) analysis of airport economics for the global industry that is based on data for the 2018 financial year for 936 international airports. ACI's study identify the global airport Key Performance Indicators and benchmark values. In this perspective, for the analysed airports it has emerged the following set of KPI data:

- Global industry revenues USD 178 billion
- Aeronautical revenues 55.9%
- Non aeronautical revenues 39.2%
- Non-operating revenues 4.9%
- Global Return on Invested Capital 7.2%
- Global Aeronautical revenues per passenger USD 10.03
- Global Non-Aeronautical revenues per passenger USD 7.03
- Total cost per passenger USD 13.70
- Capital expenditure per passenger USD 6.00

These global parameters have been used as a reference to define a model to estimate the Internal Rate of Return of the investments in airport development officially included in the 10 Years Perspective Development Plan (2013-2022).

To derive the perspective revenue flows for the analysed airports, the estimated demand of air transport up to 2050 for the selected airports has been used. In addition, an adjustment has been made to take into consideration the difference in purchasing power of the average Ethiopian resident compared to the western world average levels of disposable income. The model has provided a set of results that are explained in the following paragraphs.

The following investment projects from the 10 Years Perspective Development Plan (2013-2022) have been evaluated for potential PPP development.

- Tower and related construction in Shire Airport;
- Tower and related construction in Jinka Airport;
- Tower and construction in Hawassa Airport;
- Tower and related construction in Assosa Airport;
- Tower and related construction in Semera Airport;
- Building towers and air navigation

facilities for Bahirdar airport;

- Building towers and air navigation facilities for Dembidolo airport.

Tower and related construction in Shire Airport

Shire is located in North Tigray region with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). A development plan for a renewed airport had been studied by the former Ethiopian Airport Enterprise (EAE) before 2017, when EAE was merged into EAG, and some images for the plan are currently publicly available on internet. The construction of the control tower has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to some USD 865 thousand.

According to the estimates of traffic demand for 2050 that are illustrated in the Aviation Sectoral Report there would be further capacity to increase the investment volumes in order to improve the general airport infrastructure. It has been estimated that some additional USD 1,5 million could be invested on the airport. This would generate an Internal Rate of Return (IRR) of 14% for Shire airport as combined investments.

This level of IRR for the total investment would be compatible with the expectations of private investors to be involved in a PPP project.

Tower and related construction in Jinka Airport

Jinka is located in Tigray region with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). A development plan for a renewed airport had been studied by the former Ethiopian Airport Enterprise (EAE) before 2017, when EAE was merged into EAG, and some images for the plan are currently publicly available on internet. The construction of the control tower has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to USD 876 thousand.

According to the estimates of traffic demand for 2050 that are illustrated in the Aviation Sectoral Report, flows for Jinka are not so substantial to justify further investment volumes aimed at improving the general airport infrastructure.

With the level of investment budgeted and based on demand estimates, an Internal Rate of Return (IRR) of 9% would be generated for Jinka airport. Such level of IRR seems too low to attract private investors to be involved in a potential PPP project.

Tower and related construction in Hawassa Airport

Hawassa is located in the Great Rift Valley region with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). A development plan for a renewed airport had been studied by the former Ethiopian Airport Enterprise (EAE) before 2017, and some images for the plan are currently publicly available. The construction of the control tower has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to USD 719 thousand.

Hawassa is an important city in Ethiopia and able to generate air traffic demand. According to the estimates of traffic demand for 2050 that are illustrated in the Aviation Sectoral Report, flows for Hawassa, would justify further investment volumes of some USD 5 million aimed at improving the general airport infrastructure.

The combined volume of investments, budgeted and additional, based on traffic estimates, would generate an Internal Rate of Return (IRR) of 36% for Hawassa airport. Such level of IRR is high and would be attractive for private investors to be involved in a potential PPP project.

Tower and related construction in Assosa Airport

Assosa is located in Benishangul-Gumuz Region region in the North West of Addis Ababa and with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). The construction of the control tower has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to USD 536 thousand.

The estimates of traffic demand for 2050 illustrated in the Aviation Sectoral Report, is for a level that would justify further investment volumes of some additional USD 600 thousand over the period aimed at improving the general airport infrastructure.

The combined volume of investments, budgeted and additional, based on traffic estimates, would generate an Internal Rate of Return (IRR) of 18% for Assosa airport. Such level of IRR would be considered attractive for private investors to be involved in a potential PPP project.

Tower and related construction in Semera Airport

Semera is located in Afar region, close to the Djibouti border, with an existing airport currently in the domestic network served by Ethiopian

Airlines Group (EAG). The construction of the control tower has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to some USD 846 thousand.

According to the estimates of traffic demand for Semera at year 2050, illustrated in the Aviation Sectoral Report, passenger flows will grow over time and justify further investment volumes of some additional USD 4 million aimed at improving the general airport infrastructure.

The combined volume of investments, budgeted and additional, based on traffic estimates for the whole period, would generate an Internal Rate of Return (IRR) of 31% for Semera airport. Such level of IRR is high and would be attractive for private investors to be involved in a potential PPP project on this airport.

Building towers and air navigation facilities for Bahirdar airport

Bahirdar is located in Amara region, close to Lake Tana, with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). The construction of the control tower and air navigation facilities has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to some USD 924 thousand.

According to the estimates of traffic demand for Bahirdar at year 2050, as illustrated in the Aviation Sectoral Report, passenger flows will grow over time so as to justify further investment volumes of some additional USD 7 million aimed at improving the general airport infrastructure.

The combined volume of investments, budgeted and additional, based on traffic estimates for the whole period, would generate an Internal Rate of Return (IRR) of 40% for Bahirdar airport. Such level of IRR is very high and would be a strong attraction for private investors looking for potential PPP airport projects.

Building towers and air navigation facilities for Dembidolo airport

Dembidolo (Dembi Dollo) is located in Oromia region, not far from the border with South Sudan, with an existing airport currently in the domestic network served by Ethiopian Airlines Group (EAG). The construction of the control tower and air navigation facilities has been budgeted in the 10 Years Perspective Development Plan (2013-2022) for an amount equivalent to some USD 924 thousand.

According to the estimates of traffic demand for Dembidolo at year 2050, as illustrated in the

Aviation Sectoral Report, passenger flows will grow over time so as to justify further investment volumes of some additional USD 7 million aimed at improving the general airport infrastructure.

The combined volume of investments, budgeted and additional, based on traffic estimates for the whole period, would generate an Internal Rate of Return (IRR) of 22% for Dembidolo airport. This level of IRR is high and would be attractive for

private investors looking for potential PPP airport projects.

In Total, seven Ethiopian Airport investments have been evaluated.

In the following table the synopsis of the results is shown. The funding of a total of 30,6 million USD of investments can be avoided by the Treasury.

Table 66: Financial internal rate of return of selected Airports

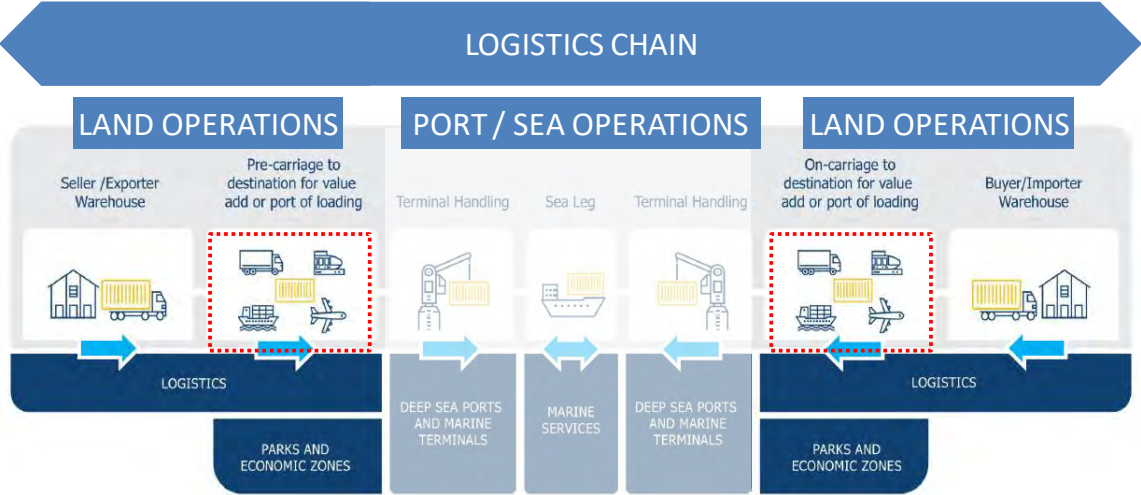
	FIRR %
	2025
Shire Airport	13,7
	2035
Jinka Airport	9,2
Hawassa Airport	35,6
Assosa Airport	17,6
Semera Airport	30,6
Bahir Dar Airport	40,1
Dembidolo Airport	22,3

3.6.8 The evaluation of the eligibility for PPP of the Dry-ports Projects.

The case of dry ports investments evaluation, in view of the adoption of a PPP approach, has to take in account firstly the economic role of a dry port. The figure below depicts the role of land terminals within a generic logistics chain: it is possible to see that inbound and outbound

operations are involved, both for import and export aims. Moreover, generally speaking, not only international traffic could transit in a dry port, but also domestic destinations could, by adopting logistics solutions of efficient intermodal transport.

Figure 30: Dry ports' role within the logistics chain



Source: Consultant's elaboration on DP World Presentation July 2020

The picture above enlightens a fundamental issue: dry ports are embedded in a complex transport chain, involving a main leg represented by sea shipping. Accordingly, the economic parameters needed to evaluate the financial sustainability of a dry port investment has to be

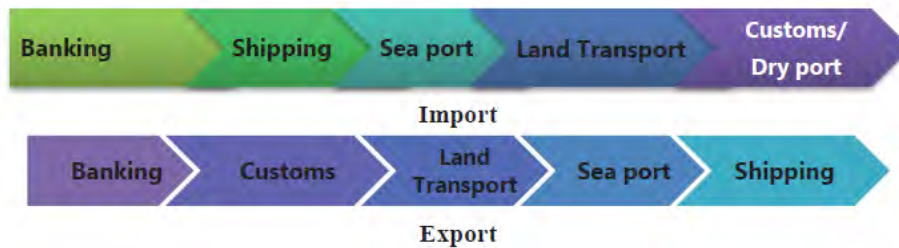
referred, as much as possible, to the logistics environment in which the dry port will operate.

As stated in the previous parts of this chapter the basic parameters to judge the profitability of an investment are related with the cost of capital, the flows of operational costs, the flows of revenues coming from the operational period of

the asset. In the case of dry ports all these figures arise from: i) the estimation of demand flows, and ii) some hypothesis concerning revenues and costs of dry ports operations during a specific period of time. A description of both evaluations and hypothesis is given in the following lines.

The hypothesis underlying the estimation of revenues and costs of each dry port are grounded on the considerations made above about the logistics environment of the country. The National Logistics Strategy provides a clear assessment of the present structure of the logistics chains, both for import and export activities. The figure below describes this structure.

Figure 31: Current freight logistics systems in Ethiopia



Source: FDRE, National Logistics Strategy 2019

The activities potentially generating a stream of revenues includes consolidation/deconsolidation of containers, loading/unloading of units on trucks/wagons, warehousing, container cleaning and other value-adding services. This assumption is consistent with both industrial and logistics policies of the country which are aimed at developing manufacturing and Agro industrial activities, particularly focused on export and concentrated in Industrial and Agro Industrial Parks. Moreover, the assumption is consistent with the view of the Ethiopian governments about dry ports' business. This does not mean that other revenue flows cannot be possible, for example those that derive from Bulk freight traffic or from the development of an intermodal network of domestic routes.

In accordance with the considerations mentioned above, traffic flows underlying the revenue streams are limited to that of containerized traffic, which will be the quantitative base for the estimation of dry port revenues.

Coming to pricing hypothesis, the references should be the figures collected in the National Logistics Strategy, which provides values for import logistics chains and for each macro phase. In this case the unit value is fixed at 113\$ per TEU, which is the "Logistics cost" for Multimodal transport in case of purchasing Inland dry port service⁶⁷. For export revenues the unit value is that estimated by World Bank in the appraisal of the development project of Modjo dry port, carried out by IDA within the Ethiopia Trade

Logistic Project. In this case the unit value has been identified at 200\$ per TEU⁶⁸.

In order to complete the description of unit revenues, also real estate activities must be taken in account. In this case it is possible to estimate a unit value or real estate revenues starting from the total surface of each dry port and give the fact that only a fraction of the total surface can be a leasable surface. The eligible areas are all surfaces/buildings (such as offices, warehouses, vehicle depots, maintenance areas, fenced/unfenced surfaces) that could be used to provide services. The leasable share can be estimated at about 33% of the total surface, being the remaining area devoted to the general functioning of the dry port. As far as real estate profit rate is concerned, 6% is a benchmark value to be adopted.

The costing side can be estimated by using a markup approach. The starting point is the average revenue of about 138\$ per TEU arising from the weighted average of import and export unit revenues described above. Looking at Profit and Loss accounts of ESLSE, the public enterprise which is the dominant operator on the logistics market, the Gross operating profit (or EBITDA) varies from 12% to 23% of total revenues⁶⁹. Considering that: i) the shipping business area is an unprofitable one (so that the profit of the dry port business area should be likely higher than that of the entire company) and, ii) a certain

⁶⁷ See FDRE, National Logistics Strategy 2019, Table 7.

⁶⁸ IDA, Ethiopia Trade Logistics Project, Project Appraisal Document, Annex 5, Economic analysis, 2017.

⁶⁹ ESLSE Statistical Bulletin 2012 EC.

degree of inefficiency of the public operator can be assumed (it is a main finding of the National Logistics Strategy), it is possible to take as a benchmark markup the higher level of the fork

12%-23%. This leads to a unit cost of about 107\$ per TEU.

In the table below are summarized the main figures used to evaluate the eligibility of eight dry ports under a PPP framework.

Table 67: Main figures of dry port evaluation

	TEU / Year	Total Hectars	Total Capital Costs (\$)	Operational Costs (\$)	Revenues (\$)
Hawassa					
2025	7.352,7	3,2	7.247.220	786.329	1.400.475
2035	14.102,7	-	-	1.508.205	2.553.227
2050	74.789,6	17,1	38.433.568	7.998.337	13.540.312
Jimma					
2025	15.919,3	3,6	8.180.775	1.702.486	2.882.122
2035	15.572,1	-	-	1.665.348	2.822.818
2050	38.864,2	8,9	19.971.887	4.156.312	7.036.182
Assosa					
2025	2.006,1	1,6	3.610.337	214.537	414.725
2035	2.720,7	-	-	290.960	536.764
2050	7.025,5	-	-	751.340	1.271.937
Yabeb					
2025					
2035	7.051,3	1,6	3.623.610	754.103	1.276.613
2050	37.394,8	8,6	19.216.784	3.999.169	6.770.156
Gambela					
2025					
2035	7.786,0	4,5	9.985.943	832.674	1.529.202
2050	19.432,1	-	-	2.078.156	3.518.091
Weldia					
2025					
2035					
2050	112.666,6	25,8	57.898.120	12.049.068	20.397.758
Gondar					
2025					
2035					
2050	80.156,4	18,4	41.191.464	8.572.278	14.511.931
Gode					
2025					
2035					
2050	58.905,9	13,5	30.271.080	6.299.657	10.664.632

As the planning of dry port investments provides a workplan up to 2050, for certain dry ports the values of 2025 or 2035 are missing because the

construction period is supposed to start after that date.

Table 68: Financial Internal rate of return of selected Dry-ports

	FIRR %
2025	
Hawassa	14,0
Jimma	13,9
Assosa	7,5
2035	
Yabelo	19,0
Gambela	9,5
2050	
Weldia	11,1

Gondar	11,1
Gode	11,1

Almost all investments seem to be eligible, or nearly by, for a PPP scheme. Six out of eight (Hawassa, Jimma, Yabelo, Weldia, Gondar, Gode) are above the threshold of 10,47% of FIRR value and the seventh (Gambella) is not far, at 9,5%. Only Assosa, at 7,5%, is clearly below the line.

Considering the total of the six dry-ports that are eligible for PPP, the amount of investments that can be diverted from state treasury to private operators reaches the level of 853,8 million USD.

3.6.9 Synthesis of the eligibility for PPP of the transport infrastructure Projects.

After the analysis of the main infrastructure investments, under the point of view of the profitability of the business case that can be built on them, some general remarks can be done.

Out of the 44 business cases examined, 41 have found a way to be eligible under specific but not unrealistic hypotheses. This means that also for the transport sector the private participation can be a powerful tool, but it requires to be used in a way to arrange the institutional and regulatory framework of the specific sector accordingly.

In financial terms, the amount of investments that can be leveraged by the private sector is huge and can constitute a powerful vector of the transport sector development, but also of the national macroeconomic development. As can be seen in the following table, a total amount of 6,75 billion dollars can be potentially invested in transport sector by private as an alternative to the public funding. It requires specific regulatory circumstances and also a huge direct involvement of direct investment by the treasury, particularly for the railway lines.

Table 69: Synthesis of the projects eligible to be financed via PPP

	Number of projects potentially eligible	Amount of investments potentially funded by privates (Billion USD)
Expressways	6	5,228
Railways lines	13	3,3
National Airports	6	0,03
Dry-Ports	7	0,85
Total	32	9,408

3.7 PROJECT DELIVERY: SEQUENCING AND CHALLENGES FOR INVESTMENTS AND POLICY MEASURES

3.7.1 Introduction.

The implementation of the National Transport Masterplan has many challenges. The scope of this chapter is to clarify the sequencing of the activities and decision to be taken for an effective and transparent governance of the Masterplan implementation.

The four streams of activities that will be necessary to coordinate and to put in a correct phasing are:

- i. the Masterplan governance;

- ii. the investments programs implementation cycle;
- iii. the accompanying policies and regulatory measures;
- iv. the capacity building activities.

Each of the points will be treated in sequence the following paragraphs, and a final paragraph will contain the inter-relationship between the four streams of activities and final recommendations.

3.7.2 The Masterplan governance.

The present Transport Masterplan is the second experience of this type done in Ethiopia. The previous one had been developed in the years 2006-2007 by the Belgian consulting company COWI, and covered the period 2007-2027.

The best international practices clearly indicate that the “quality jump” in transport planning is the switch from the occasional logic to the systematic process, in which the Masterplan is periodically updated, and the transport model behind the Masterplan receive periodic updates of the input data and generates new projections, that are at the basis of the updating of the planning of new infrastructures and of the investment priority list.

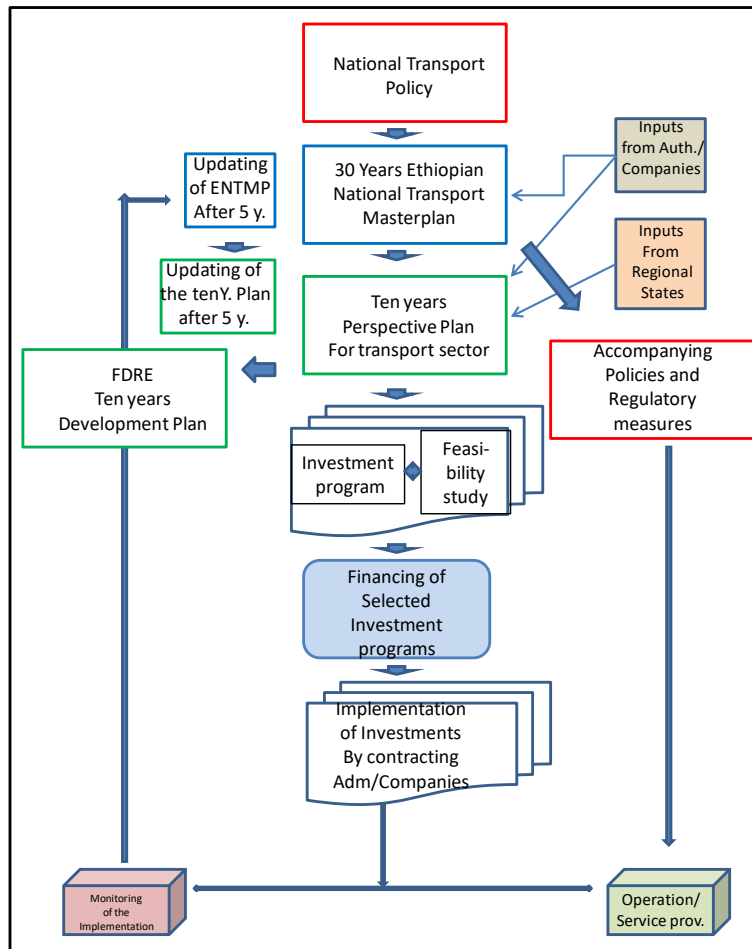
In this occasion the right moves have been done in this direction: the transport model is under installation in the MOTL and the local technical personnel is under training for the use of it. This paves the ground for a continuous improvement of the planning process, based on data and on traffic flows forecasts with scientific background.

The recommended period of updating of the Masterplan is **five years**. This period is the right equilibrium of the demanding activities needed and the need to have updated long-term projections. This allows also to update the ten years Perspective Plan at its mid-term life.

It is worth to be underlined the unprecedented planning effort exerted in the recent years by the Ministry of Transport, that in 2020 issued the National Transport Policy of Ethiopia, endorsed by the FDRE Council of Ministers, and in 2020-2021 issued the Transport sector ten years Perspective plan, as part of the Ten years Development Plan – A Path to Prosperity (2021-2030) of the FDRE – planning and Development Commission.

Now, with the thirty years Masterplan (2021-2050) the whole transport planning process can be fully implemented. The correct planning process, at regime, can be represented in the following figure.

Figure 32: Process of Planning and implementation of Public Investments in the Transport Sector



Here a description of the Process of Planning and implementation of Public Investments in the Transport Sector:

- a) The Ministry of Transport and logistics issues the National Transport policy, and the FDRE Council of Ministers endorses the Policy;
- b) On the basis of the National Transport Policy, and with the necessary inputs by the competent Authorities, Administrations and SOE, the 30 years Ethiopian National Transport master plan is defined and issued;
- c) In coherence with The ENTMP the ten years Perspective Plan is formulated for each transport sector, with the necessary inputs by the competent Authorities, Administrations and SOE and by the regional States;
- d) the ten years Perspective Plan is integrated in the FDRE Ten years development Plan;
- e) The ENTMP specifies the Accompanying Policies and the Regulatory measures for each sub-sector, and the competent institutions transform the recommendations in new Regulations;
- f) On the basis of the ten years perspective plan new infrastructure provision, the specific investment programs are formulated, and the feasibility studies define standards, alignment, preliminary design and budget
- g) The Investment Programs that pass the feasibility phase are financed via Treasury transfers, loans or PPP;
- h) Once financed the implementation phase starts: detail design and construction are tendered by the contracting Administration and the awarded bidder starts the construction of the new infrastructure.
- i) During the construction phase the investment is monitored up to the final commissioning, and the returns from experience are conceptualized;
- j) the new infrastructure starts its operation, and the transport services are provided according to the implemented regulatory framework. The market for

the specific services finds its new equilibrium and expresses the corresponding traffic flows

- k) the returns from monitoring and the responses of the market are the basis for the updating of the 30 Years ENTMP each five years, up to a new ENTMP formulation;
- l) on the basis of the updating after five years of the ENTMP, the ten years Perspective plan is updated in turn, generating a new cycle of feasibility studies, financing and implementation.

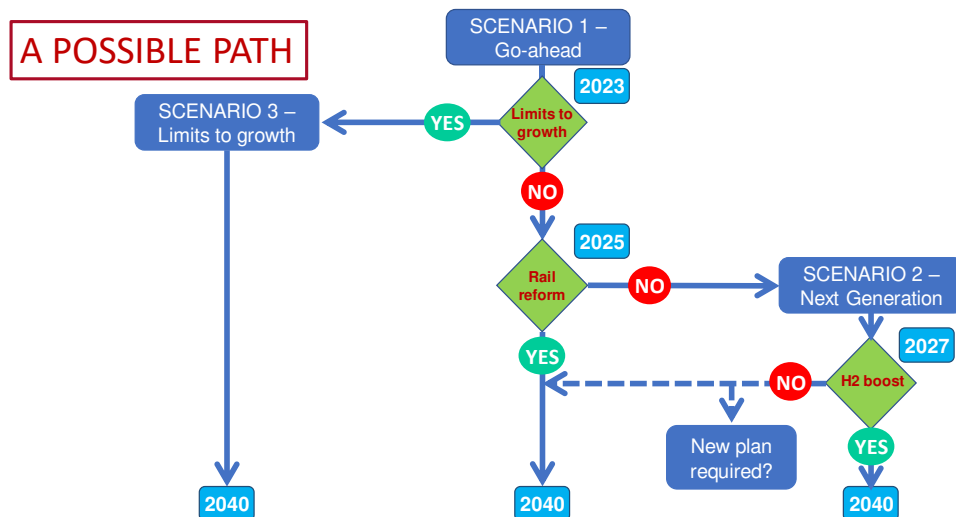
This is of course a schematic description, that doesn't enter in the many challenges that it implies. Nevertheless, an important point requires to be specified in a schematic view of the planning process: due to the very particular moment that the world is living after the Covid 19 outbreak and the additional uncertainties that are characterizing this historical moment, the ENTMP has been formulated in accordance to

three different scenarios, and this has been made to straighten the resilience of the Masterplan, as a possible compass for the future decisions.

The base scenario (Go-ahead) is coherent with the policy expressed by the Government in its "Homegrown Economic Reform Plan" and with the economic projections that it contains, but a number of key uncertainties in the transport domain have been identified and alternative scenarios have been formulated. So, there is the necessity to check if the hypothesis under the plan projections are materialized in the shape and in the dimensions expected, and if not, it is still possible to switch to another Scenario, more coherent with the situation of the moment, with its specific list of new infrastructures and time scheduling for their construction.

The road map for the Scenario switching had been already presented in the Consolidated Masterplan deliverable, but it is opportune to recall it at this point.

Figure 33: A possible path for the Scenarios Shifting



Three key uncertainties have been identified as switching points from one scenario to another.

The first key uncertainty to face in the time scale will be about the depth of the global economic crisis deriving from the pandemic and the recovery times at international and national level.

Within year 2023 it will be already time to ask the following question:

- **will economic growth recover, and Homegrown economic reform plan can be respected?**

As a matter of fact, if the Ethiopian national GDP growth has not restored and reached a yearly rate of at least 3-4%, the transport infrastructure investment planned in the go-

ahead Scenario will hardly be financially sustainable by the State Treasury, and will be necessary to reduce the investment plan, or, in other words, to switch to the Limits-to-growth Scenario. In that scenario the stagnation will last about seven years, probably coupled with general instability, and then is expected that the path of growth will be restored, and a more significant amount of infrastructure investments can be performed.

In the hopefully case that the Homegrown economic reform plan can be respected, then the next key uncertainty will materialize around the year 2025, a time span sufficient to understand if the complex

process of railway reform, at present under study by the MOTL, will have started having encouraging results, both in terms of institutional capacity and in terms of commercial and production performance of the operating railway lines, particularly the Addis- Djibouti one.

So, the question to be answered around year 2025 is the following:

- **will Ethiopian railway reform be successful, and its commercial performance accelerates?**

If the answer will be positive, then the Go-Ahead Scenario will still be on and its policies and investment plan, with a huge part dedicated to railway lines, can continue. If the answer, at the opposite, will be negative, to invest very relevant resources in a modality that still has institutional, organization and technical problems unresolved will be a hazard. In this case it will be logical to bet more on the road modality, and, in order to mitigate the environmental impact of this policy, it will be opportune to structure a policy of incentives and of direct intervention by the SOE to anticipate the introduction of less impacting vehicles. In other words, it will be

the case to switch to the Next Generation Scenario.

Also, in this scenario a key uncertainty will be faced, presumably around the year 2027. At that period, it will be much easier to answer the question about the third key uncertainty:

- **is the “energy transition” and the Hydrogen technologic shift materializing?**

In case of positive answer, the relevant road investments can be effectively complemented with the incentives policy, and the effect in the medium-long term will be a significant development of the road transport in a framework of economic and environmental sustainability. In case of negative answer, it will be necessary to make a technology assessment and coherently define a “road vehicles strategy”, that can assume as “bridge policy” an intermediate stage of promotion of more mature and low impacting technologies, as hybrid motorization and/or LNG engines.

At the same time the status of the railway sector can be re-evaluated. At that point it is recommended a new comprehensive planning exercise, with the formulation of a new national transport Masterplan.

3.7.3 The investments programs implementation cycle.

Ethiopia construction and engineering sector has cumulated years of significant experience in the construction of new infrastructures: many of the most relevant international engineering companies have worked here, and the on-field experience has allowed to structure a very good category of national professionals for jobs like, as an example, works surveying, materials management, project supervision and program management. The number of graduated in scientific and technical disciplines is fast growing, together with the number of universities and specialized Academies scattered in the Ethiopian Regional States.

However, the challenges that are implicit in the implementation of the National Transport Masterplan are very high, and some part of the investment implementation cycle require particular attention and concern. In the following pages the main critical areas will be analysed and addressed.

The Feasibility Study

The first concern is about the paramount importance of the feasibility study. The quality and the effectiveness of an infrastructure originates by its conception and each step is relevant:

- The decision about the **technical standards** is the most constraining in the medium term, and then one of the most important: in the case of railways, to understand the trade-off between single track and double track, between passing loops every 50 or 15 km, and decide correctly, with reference to a focused traffic study, makes the difference between success and failure. The same for expressways: number of lanes, if a new alignment of the rehabilitation of an existing road are among the key decisions.
- Then there is the **alignment study**, with all the trade-off between how costly and how performing can be the infrastructure and how ambitious can it be in terms of

tunnels and viaducts, and how to manage the topography and the environment challenges, and how the alignment eases the integration with other transport modes.

- A **preliminary design** should be good enough to allow an analytic evaluation of the costs of the infrastructure building and maintaining with an approximation of the 20% maximum.
- The **traffic study** and the connected revenue forecast requires a data collection and a modelling specific for the infrastructure under study.
- The **business case**, that in the logic of lifecycle specifies Capex, Opex and Revenues and allows to calculate the profitability of the investment under different hypotheses of financing, should have the standards for the bankability of the feasibility, that is to say that must contain all the answers to the possible questions of the potential investor or financing institution.
- The **Costs- Benefits Analysis**, that allows to understand how the public investment is convenient for the public interest and what are the stakeholders that are invested by the benefits and by the costs, is the road map to manage the consensus around the initiative and to promote it at the right levels.

The third party between detailed design and construction.

The second concern is the separation of the subject performing detailed design and project supervision from the construction Company. Past experiences show that the EPC turnkey contracts may be a shortcut that over time reveals all the weaknesses. It is crucial the balance of powers after the contract signing: the committing institution risks to be at the mercy of the constructor if the work supervision party is not the one who has expressed the detailed design, because has not the technical strength to impose the decisions in the interest of the committing entity. The situation is even more serious if the EPC contract is assigned together with the financing of the investment. In these conditions the unbalance is such that also the engineering company that has the supervision role is attracted in the sphere of interest of the construction company.

The timing coordination with the regulatory streaming

The third concern is about the timing coordination between the development of infrastructures and the standard setting and technical regulation of the sector. The timing of the railway development in Ethiopia, under this point of view, is the case not to be followed: the Addis- Djibouti line construction started in 2014, in a total regulatory legislation void. The Proclamation 1078 about railway sector regulation was issued in the 2017 and the Regulations and Directives that make the regulatory framework operational have not yet been issued. In the meantime, the Awash-Weldya Mekkele line started its construction, still in absence of national technical standards, and the standard adopted for signalling were not totally coherent with the ones used in the Addis Ababa - Djibouti line, with consequences on the interoperability of the two lines.

New sectors to be developed, as inland waterways, and the standard change by new technologies introduction, constitute in perspective challenges of timing coordination that must not be underestimated.

The impact of the new investments on FX

As it is known, the Foreign Currency shortage is a serious constrain to the economic development in Ethiopia. Consequently, the fourth and last concern is about the impact of the new investments on the FX demand. The issue can be examined at two levels: the impact of FX for the construction of the new infrastructures and the impact that derives from the private investments required for the use of that infrastructures. For the first level, much has been done to involve national resources (professionals, sub-contractors, local suppliers) in the investments implementation, particularly in the road sector, that is the relatively less technology intensive. But the relevant amount of new investment requires a bold step in reducing the ratio of imports of goods and services for the construction phase. For the second level, it must be considered that the road sector, that will remain the most important even in the thirty years perspective, in building new and better roads, it will stimulate the purchase of additional vehicles by the private owners, by the private companies and also by the public service providing companies for amounts well superior to the infrastructure investments. Just to make an example, on the Holeta –Ambo expressway, for an infrastructure investment of 203 million USD,

it is estimated an investment in the road vehicles that will perform the traffic on the expressway that in the thirty years period reaches the amount of 1.672 million USD, that is more than eight times the amount of the infrastructure cost. This is a very serious problem, and the best way to manage it is to accelerate the creation of national producers of road vehicles. This will imply a

significant acceleration of the policy of “import substitution” via trans-plants creation in Ethiopia, already started successfully, with the collaboration of foreign producers that provide technology and components for the local production. The success of this policy will be perhaps the single most important condition for the implementation of the Masterplan.

3.7.4 The accompanying policies and regulatory measures.

The following table synthesizes the policies and regulations to be implemented as accompanying measures for the implementation of the

Transport Masterplan, with reference to the time span of their implementation.

Table 70: Strategic goals, objectives and policy measures - Roads

GOAL	Objective	Measure	Short term	Medium long term
a. Develop the road network, the vehicles fleet and increase the domestic capabilities of the sub-sector.	Promote the communities' capabilities to manage and maintain local infrastructure	Provide the extension of the Purchasing machineries programs adopted in some Regional States to all remaining RS	Prepare a road map to extend the program Build up an Implementation Task force Unit at ERA with all involved RRAs Define KPIs and monitoring procedures	
	Support domestic vehicles manufacturing	Introduce shares of domestic production in the procurement of mass vehicles	Define the level of the reserved shares for different vehicles type discuss with Regional States an implementation road map Prepare KPIs and monitoring procedures	
b. Prepare the opening of the market through an accurate selection of private initiatives.	Develop a sub sectoral risk analysis to have homogenous risk mapping and allocation criteria for road investments	Define criteria for risk mapping in road sub-sector Amend the PPP Directive	Define criteria for risk mapping in road sub-sector Amend the PPP Directive	Revise the map according with changes in risk factors and outcomes of PPP projects
	Develop policies to incentivize private investments in service providing	Introduce Tax exemptions for mass vehicles involved in public service providing.	Define the exemptions or similar incentives according to kind of investment and kind of service involved Prepare KPIs and monitoring procedure	
c. Provide a suitable level of transport services produced by public or private operators.	Provide public budget to Regional States to finance PSO.	Amend the Federal budget procedure	Amend the Federal budget procedure Discuss with Regional States the implementation of budget constraints	
	Introduce an allocation constraint for the budget transferred			
	Define criteria to ensure a minimum level of service providing in the country	Define PSO for both public and private operators.	Assess the public service providing in each Rstate Define a minimum level of public services to be ensured at RStates' level	Complete the implementation of PSO regime for all Regional states

GOAL	Objective	Measure	Short term	Medium long term
			Prepare a road map for progressive implementation of PSO regime	
	Introduce the concept of Public Service Obligation	Define PSC for service providing.	Define a standard of PS Contract	
		Define minimum tariff schemes	Define a Tariff obligation scheme	
	Introduce competitive procedures to assign PSO in order to minimise the financial disbursements	Prepare a procurement procedure for PSO	Define the procurement system for PSO	
d. Improve the Sustainability of the road sector and minimize the impact of road mobility (collective and private vehicles).	Road Safety Policy and Non-Motorized Transport Strategy	Carry on the implementation of RS policy and NM Strategy	Carry on the implementation of RS policy and NM Strategy	
	Non-Motorized Transport Strategy	Carry on the implementation of NM Strategy	Carry on the implementation of NM Strategy	
	Sustainable Road sub-sector improvement	Establish EIA process for new infrastructures Implement sustainable infrastructure design	Establish EIA process for new infrastructures Implement sustainable infrastructure design	
		Incentivize low impact road vehicles	Define a tax exemption or similar incentive for vehicle category	
e. Enhance the ability and the skills of institutions' officials and employees	Define the mission and common organizational principles for RRAs	Implement the proposal of RSD Program concerning the Institutional Organizational Setup and Structure of RRAs	Prepare an implementation road map of RRAs Prepare KPIs and monitoring procedure	
	Define the mission and common organizational principles for Regional Transport Bureaus	Assess the status of Regional Transport Bureaus	Prepare the assessment of RTAs	
		Draft common organizational principles for RTBs, consistent with RRAs	Discuss the common organizational principles with Regional States Establish revised RTAs	
	Coordinate and enhance the CB program in road sub sector	Undertake a census of CB programs.	Undertake a census of CB programs.	
		Design a measurement system allowing the evaluation of the results.	Design a measurement system allowing the evaluation of the results.	
		Draft a procedure to coordinate and prioritize the CB programs	Draft a procedure to coordinate and prioritize the CB programs	

Table 71: Strategic goals, objectives and policy measures – Railways

GOAL	Objective	Measure	Short term	Medium long term
a. Strengthen the start up of the sub-sector.	Increase the level of services	Remove the financial and organizational obstacles		
	Improve the railways' productivity			
	Open the line under construction			
b. Review the governance of the sector	Review the governance of the sector	Choose the business model for railway sub-sector	Implement the 'French model' and review accordingly the	Introduce the open access on the national railway network

GOAL	Objective	Measure	Short term	Medium long term
and improve the regulatory framework.		Review ERC and EDR's mission	mission of the railway companies	
		Negotiate with the partner the liquidation of CDE and the related valuation of the assets	Negotiate with the partner the liquidation of CDE Provide an asset evaluation and negotiate with the partner the withdrawal of the company	
		Allocate AALRT unit under AA Municipality	Allocate AALRT unit under AA Municipality	
	Improve the regulatory framework	Establish the Rail Authority	Establish the Rail Authority and complete the procedures of selection and hiring of personnel	
		Assign responsibility for railway economic regulation	Decide whether RA of MOTL Directorate will be in charge of economic regulation	Allocate economic regulation to RA
		Prepare suitable contractual solutions to implement the management of railway operation to EDR on the ENR network (Infrastructure Manager and Service provider)	Prepare suitable contractual solutions to implement the management of railway operation to EDR on the ENR network (Infrastructure Manager and Service provider)	
	Complete the rules to face the market opening	Provide the legal / administrative provisions to make the market opening possible Monitor legal / administrative constraints to private's proposals		
c. Prepare the opening of the market towards a stepwise railway privatization.	Prepare the market opening	Solicit private's contribution in the following areas: - Short connections - Rolling stock leasing - Simple traction services - Management of Logistics facilities - Non-core assets divestments		
		Define criteria for risk mapping in road sub-sector	Define criteria for risk mapping in road sub-sector	Revise the map according with changes in risk factors and outcomes of PPP projects
		Amend the PPP Directive	Amend the PPP Directive	
d. Define the standards of the system to guarantee internal and international interoperability.	Define railway system standards to ensure interoperability	Define railway construction standards	Issue the legal act / procedure defining railway construction standards	
		Define interoperability criteria for the domestic network and interoperability guidelines to promote continental interoperability	Define interoperability criteria for the domestic network and interoperability guidelines to promote continental interoperability	
e. Build and develop a system of fundamental skills to grow railway professionalis	Build the system of fundamental railway skills	Improve specialised engineering training courses at academic (BSC and MSC) and TVET level	Improve specialised engineering training courses at academic (BSC and MSC) and TVET level	
		Enlarge the disciplines involved in the	Enlarge the disciplines involved in the	

GOAL	Objective	Measure	Short term	Medium long term
m.		improvement of railway culture (Economics, Management, Environmental Sciences)	improvement of railway culture (Economics, Management, Environmental Sciences)	
		Complete the Rail academy project	Complete the Rail academy project	

Table 72: Strategic goals, objectives and policy measures - Logistics and Maritime

GOAL	Objective	Measure	Short term	Medium long term
a. Define a clear economic framework for the security of trade flows.	Define the Public Service Obligation for ownership and management of the naval fleet	Define criteria to establish the service obligation for ownership and management of the naval fleet	Define criteria to establish the service obligation for ownership and management of the naval fleet	
		Establish the service obligation	Identify the scope of the service(s)	
			Identify the net cost related to the service	
	Assign and negotiate with ESLSE the providing of the service(s)	Define a contractual scheme to negotiate the obligation for ownership and management of the naval fleet	Define a contractual scheme to negotiate the obligation for ownership and management of the naval fleet Provide KPIs and monitoring procedures with quantity / quality targets	
b. Define and implement the economic and regulatory framework in view of market opening.	Define the kind of liberalization approach	Update the National Logistics Policy towards the open access approach		
		Revise / amend the MTO Directive and the FoB Directive	Introduce a temporary permit under an MOTL decision to select the first operators matching reasonable criteria	Revise / amend the MTO Directive and the FoB Directive
		Draft a Dry Port Directive	Draft a Dry Port Directive establishing the right to use the DP facilities subject to a fee payment Provide criteria for transparent allocation of spaces and facilities	
	Develop a sub sectoral risk analysis to have homogenous risk mapping and allocation criteria for Logistics investments	Define criteria for risk mapping in Logistics sub-sector	Define criteria for risk mapping in Logistics sub-sector	
		Amend the PPP Directive	Amend the PPP Directive	
	Review the mission and the structure of ESLSE	Review the scope and regime of services (market services / non liberalized services)	Review the scope and regime of services (market services / non liberalized services)	
		Review accordingly the mission of business units according with	Review accordingly the mission of	

GOAL	Objective	Measure	Short term	Medium long term
		the scope of service	business units according with the scope of service	
		Adopt a suitable accounting system (accounting separation) for cost calculation of all the services	Adopt a suitable accounting system (accounting separation) for cost calculation of all the services	
		Provide a development plan of the enterprise within the new mission	Provide a development plan of the enterprise within the new mission	
c. Exploit the potential synergies between railways and logistics sub-sectors.	Review the regulatory framework to enlarge business opportunities	Revise / amend the MTO Directive		
	Promote business proposals from the private sector	Solicit private's contribution in the following areas: - development of road/rail links in dry ports		
		- reefer logistics chain (warehouses, specialised vehicles / wagons, ICT applications and systems)		
	NLS / NLP objectives	NLS / NLP measures		

Table 73: Strategic goals, objectives and policy measures – Aviation

GOAL	Objective	Measure	Short term	Medium long term
a. Develop the aviation domestic market implementing an effective market liberalization.	Develop the domestic market	Solicit private's contribution in the following areas:	Solicit private's contribution in the following areas:	
		- development of domestic passenger services	- development of domestic passenger services	
		- specialised services for civil / environmental protection	- specialised services for civil / environmental protection	
		- ancillary services (airports / airlines)	- ancillary services (airports / airlines)	
		EAG to expand the domestic network served	EAG to expand the domestic network served	
		EAG to collaborate with domestic operators to create a focused company for domestic services	EAG to collaborate with domestic operators to create a focused company for domestic services	
	Develop the domestic airport network	Solicit private's contribution in the following areas:	Solicit private's contribution in the following areas:	
		- logistics facilities for cargo services (reefer chain, pharmaceutical chain)	- logistics facilities for cargo services (reefer chain, pharmaceutical chain)	
Develop a sub sectoral risk analysis to have homogenous risk mapping and allocation criteria for sub-sectoral investments		Define criteria for risk mapping in aviation sub-sector	Define criteria for risk mapping in aviation sub-sector	
		Amend the PPP Directive	Amend the PPP Directive	
b. Reinforce the capabilities of the regulatory institutions (ECAA, EAAIB) and of the workforce.	Improve the Civil Aviation capabilities (ECAA, EAAIB)	Fields of improvement	Promote CB programs on technical capabilities Enhance the enforcement of ECAA economic regulation	
		- air traffic management		
		- technical and economic regulation		
		- infrastructure and facilities		
c. Make sustainability a priority for the Ethiopian aviation industry.	Prioritize sustainability of aviation sub-sector	Establish ESIA procedure for new airports / airstrips	Establish ESIA procedure for new airports / airstrips	
		Define with EAG a road map to make the country join the ICAO - CORSIA project.	Define with EAG a road map to make the country join the ICAO - CORSIA project.	
		Prepare a national action plan for implementation of CORSIA project	Prepare a national action plan for implementation of CORSIA project	Implementation of the plan
d. Prepare the AfCFTA implementation (SAATM) leveraging the competitive positioning of the country.	Prepare the AfCFTA implementation	EAG goes on its continental-scale commercial alliances		
		Choose the type of separation between airports and airline services	Choose the type of separation between airport unit and airline services Implement the separation according with the progresses in SAATM implementation	

Table 74: Strategic goals, objectives and policy measures - Inland waterways

GOAL	Objective	Measure	Short term	Medium long term
a. Establish a suitable level of horizontal coordination among transport activities and all the activities related to the rivers and water use.	Establish a suitable level of horizontal coordination among transport activities and all the activities related to the rivers and water use.	Provide a coordination at Federal level on the use of water resources		
		Provide a study to identify possible transport use of country's water resources		
b. Support, at Federal level, the Regional administration, to develop investment and service providing development.	Support, at Federal level, the Regional administration, to develop investment and service providing development.	Establish a specialised unit in charge to Inland waterways at MOTL		
		Support the Regional State's in the implementation of investment and service providing projects		
c. Set up the regulatory framework	Set up the regulatory framework	Draft and implement the rules of on rivers		
		Draft and implement the insurance systems for service providing on rivers		
d. Improve the capabilities	Improve the professional capabilities in Naval architecture and Naval engineering both at Federal and regional level	Identify the professionals required in Federal and regional institutions Select and hire Naval architects and Naval engineers		

Table 75: Strategic goals, objectives and policy measures - Urban and Public Transport

Objective	Measure	Short term	Medium long term
Move from a single-modal service offering to a multimodal system	Promote integrated transport systems at urban level in the main cities	Implement the PS Contracts and Tariffs schemes to provide suitable services	
	Increase the travel options within cities and at regional intersections	Define minimum level of intercity connections Introduce PS Contracts to meet the minimum level of services if required	
Enhance the capabilities of the services' providers	Promote the growth of private transport companies and their reliability		
<i>Provide public budget to Regional States to finance PSO.</i>	<i>Amend the Federal budget procedure</i>	See Road sub-sector	
<i>Introduce an allocation constraint for the budget transferred</i>			
<i>Define criteria to ensure a minimum level of service providing in the country</i>	<i>Define PSO for both public and private operators.</i>		
<i>Introduce the concept of Public Service Obligation</i>	<i>Define PSC for service providing.</i>		
	<i>Define tariff schemes</i>		
<i>Introduce competitive procedures to assign PSO in order to minimise the financial disbursements</i>	<i>Prepare a procurement procedure for PSO</i>		
Define and implement the Sustainable Urban Mobility Plan (SUMP)	Provide guidelines for SUMP's definition and implementation		

	Define a road map for SUMP's implementation	Define a road map for SUMP's implementation	
	Support the concerned Municipalities in the SUMP implementation	Support the first Municipalities in the SUMP implementation	Complete the SUMP adoption in all concerned the Municipalities identified
Define and establish Corridor Mobility Agencies	Assess and define the development corridors requesting a Corridor Mobility Agency	Assess and define the development corridors requesting a Corridor Mobility Agency	
	Undertake the procedures of Federal Government Public Projects Administration and Management System to define the road map of CMA	Undertake the procedures of Federal Government Public Projects Administration and Management System to define the road map of CMA	Support the implementation of the first CMAs
Introduce pilot project of MAAS concept and technologies	Identify MAAS project to be implemented and financed	Identify MAAS project to be implemented and financed	
Implement the Non-Motorised Transport Strategy	Implement the Non-Motorised Transport Strategy	Implement the Non-Motorised Transport Strategy	

It can be seen how the agenda is full already in the short-term perspective. this will require an unprecedented effort of coordination and stimulus by the legislative staff of MOTL in order

to concretize the act required by the competent institutions. A dedicated staff creation is recommended.

3.7.5 The capacity building activities.

Much has been already said about the capacity building theme in the dedicated chapter.

What requires to be underlined is the importance of the shift in the logic for new capacity building interventions. It is correct to continue with a de-centred bottom-up philosophy: the capacity building effort must be expressed by the Authorities and Companies that have implementation role, with the support of MOTL for the financing of the efforts, particularly in the management of the relationship of the Development banks. At the same time the role of MOTL will have to evolve as supervisor and standards setter of the initiatives in that field. For this reason, it is strongly recommended the implementation of the **Capacity Building**

Management System (CBMS) with its four components:

- the **Organization redesign** of the capacity building/human resources development unit in MOTL, in the Authorities/companies under it and the creation of ad hoc Committees.
- **Coordination procedures** between MOTL and the Authorities/Companies of the sector.
- an **Evaluation Methodology** for the measurement of the effectiveness of each capacity building/training intervention on a homogeneous base.
- an **Implementation Strategy**.

3.7.6 The management of interrelationship.

Finally, the planning and implementation effort will require a general coordination staff that will have the delicate role to harmonize the four streams of the implementation above described.

For this reason, in the MOTL structure redesign, that is ongoing after the recent Proclamation about the roles and responsibilities of the Ministries of FDRE, it is crucial to strengthen the Planning and Monitoring functions, that are nowadays mainly performed by the two structures:

- Transport Infrastructure Development

Coordination Bureau

- Plan, Budget Preparation and Monitoring Directorate;

Obviously many other ministerial functions will have to cooperate for the full implementation: among the others, the Legal Affairs, the Human Resources Development Directorate, the Information technology Directorate, The Procurement and Finance Directorate.

The quality and intensity of the coordination between the planning and monitoring functions of MOTL and the corresponding structures in the

Authorities, Administrations and State-owned companies involved in the National Masterplan implementation, together with the spirit of

cooperation between the structures, will be a key success factor.

3.8 TOTAL AMOUNT OF INVESTMENTS AND THEIR SUSTAINABILITY

3.8.1 The investment projects in each sector

In the present paragraph it will be shown the final results of the activity of definition of the investments to be done in the short, medium and long run, according to the three scenarios that

have been assumed, for each sub-sector of the transport domain.

All the main investments of each sub-sector will be plotted and commented in the following pages.

Table 76: Investments in the Road sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario						
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	
Existing Road Network	Increasing roads capacity	x	340,7	x	614,7	x	4315,3	x	340,7	x	614,7	x	4315,3	x	340,7	x	614,7	x	4315,3	
	Roads Upgrading/rehabilitation	x	702,0	x	871,6	x	474,3	x	702,0	x	871,6	x	474,3	x	702,0	x	871,6	x	474,3	
New Roads	Construction of missing links	x	1831,0	x	10966,0			x	1831,0	x	10966,0			x	1831,0	x	10966,0			
RING ROAD	0 Holeta – Sebeta – Bishoftu – Sendafa – Sululeta. Km 250	x	460,9					x	460,9							x	460,9			
	1 Metehara – DebreBerhan – Fiche - Ambo – Woliso Butajira – Meki – Dera. Km 1020			x	1900,7					x	1900,7									
	2 Semera - Weldia - Gondar - Bure - Nekemte - Jimma - Hawassa - Bale Robe - Dire Dawa Km 2080											x	3931,2							
EXPRESSWAYS	Holeta - Ambo Expressway	X	202,9					x	202,9									x	202,9	
	Addis Alem Gena - Woliso Expressway	X	250,7					x	250,7									x	250,7	
	Dengengo - Harar	X	64,5					x	64,5									x	64,5	
	Adama Awash Juncti	X	274,6					x	274,6											
	Awash - Adaitu Expressway			X	656,6			x	656,6										x	656,6
	Awash - Dire Dawa Expressway			X	680,4					x	680,4					x	680,4			
	Addis Ababa - Debre Brihan Expressway			X	310,4					x	310,4								x	310,4
	Addis Ababa - Commodo Abay River Expressway			X	496,6					x	496,6								x	496,6
	Awassa Moyale Expressway					x	1191,3					x	1191,3							
	Adaitu Mile Semera Galafi Expressway					x	422,6				x	422,6							x	422,6
	AlemGena Butajira Expressway					x	279,3				x	279,3							x	279,3
	Debre Brihan Mekelle - Eritrean Border Expressway					x	1890,9						x	1890,9						
	Commodo Abay River - Bahir Dar Metema Expressway					x	1566,2						x	1566,2						
	Ambo Nekemte Mekanajo Asosa Expressway					x	978,9						x	978,9						
	Woliso Jimma Mizan Teferi Expressway					x	1301,2						x	1301,2						
	Aposto /Scisciamana - Bitata - Dolo Somali Border Expressway					x	1487,4						x	1487,4						
Gimbi Gambela South Sudan												x	718,013							
Giggiga - Kebridehar - Somaliland border Expressway												x	1528,25							

TOTAL Infrastructure	Total term		4.127		16.497		13.907		4.784		16.542		19.383		2.874		13.594		7.473
	Total scenario						34.531						40.709						23.940
New Vehicles	Purchase of road transport vehicles (Passengers) Unit Cost 30.000 USD	x	2911	x	21941	x	93804	x	2927	x	22904	x	93601	x	896	x	17012	x	89384
	Total term		2.911		21.941		93.804		2.927		22.904		93.601		896		17.012		89.384
	Total scenario						118.655						119.432						107.292

For the road sector, that remains the most important in terms of modal share, the different streams of investments are shown in the previous table.

The investment line of the increasing of road capacity is concentrated in the long term, when the demand pressure will require it.

The road upgrading and rehabilitation flows in a regular way for the thirty years period.

The construction of missing links has a good starting in the short period, but concentrates a very relevant effort in the medium period, up to the resolution of the issue.

The three programs of investment above mentioned remain a "must" in each scenario, consequently the amount of investment remain the same in all scenarios.

The three concentric ring roads 0, 1 and 2 that have the fundamental role to connect the radial segments of the main flows, are very much differentiated in the three scenarios:

- In the "go-ahead" scenario the Ring Road 0 is built in the short run and the Ring

Road 1 is built in the medium run

- In the "next generation" scenario, the one that is mostly focused on road transport, ring roads 0 and 1 are envisaged as in the previous scenario, but also the Ring Road 2 is built in the long run, to complete the network design,
- In the "limits to growth Scenario" the limited amount of fund for investments and the reduced demand for mobility limits the ring roads construction to the Ring 0 in the medium run.

Out of the 18 Expressways envisaged, in the first scenario are considered 16, in the second scenario all the 18 and in the third scenario just 9 out of the 18 expressways are considered as active investments.

The overall result is that the road investments are significant in all periods and in each scenario, even though in a differentiated way: the total investment in the 30 years ranges from the amount of 23,9 billion USD in the third scenario, to 34,5 billion in the first scenario, up to 40,7

Billion in the second scenario.

Table 77: Investments in the Rural Roads in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Rural Roads sub-sector - Infrastructure	Rehabilitate the portion of the regional network in poor conditions			X	724					X	724					X	724		
	Rehabilitate the portion of the URRAP & community network in poor conditions			X	617					X	617					X	617		
	Build 22.688 km of new regional roads			X	947					X	947					X	947		
	Rehabilitate the portion of the regional network in poor conditions			X	724					X	724					X	724		
	Total term		0		2.288		0		0		2.288		0		0		2.288		0
	Total scenario						2.288						2.288						2.288
New Vehicles	Purchase of intercity 40 seats bus fleet	X	85					X	85					X	85				
	Total term		85		0		0		85		0		0		85		0		0
	Total scenario						85						85						85

In the Rural road section of the investments the intervention is not differentiated by scenario, as it is considered as a major tool for poverty fighting.

2,2 Billion USD will be invested into three streams of investments:

- rehabilitation of the regional road

network in poor condition for 724 million USD

- rehabilitation of the network of the URRAP and community roads for an investment of 617 million USD
- build 22.000 km of regional roads for an investment of 947 USD Million.

Table 78: Investments in the Logistic sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Logistics Sub-Sector	Construction of new dry ports	x	13,52	x	9,66	x	133,43	x	13,52	x	9,66	x	133,43	x	10,95	x	8,42	x	106,09
	Purchase of dry port equipment	x	5,52	x	3,95	x	54,50	x	5,52	x	3,95	x	54,50	x	4,47	x	3,44	x	43,33
	Total term		19		14		188		19		14		188		15		12		149
	Total scenario						221						221						177
New Vehicles	"Purchase of road transport vehicles (Heavy)																		
	Unit Cost 80.000 USD"	x	11.277	x	34.725	x	145.931	x	11.336	x	36.135	x	134.836	x	7.822	x	24.131	x	117.641
	Total term		11.277		34.725		145.931		11.336		36.135		134.836		7.822		24.131		117.641

In the Logistics sub- sector most of the logistics facilities will be built as initiative of private companies. The study limits the focus to the construction of the new Dry-ports and to the required investments in vehicles for freight transport.

The Dry-ports investment is quite limited in the short and medium run, as the land plots are dimensioned in accordance with the limited traffic to be received. In the long run, with the expansion of the freight traffic demand, also the investment on the dry ports reaches the relevant amount of 188 million USD in the Scenarios 1 and 2 and of 149 million USD in the third Scenario.

About the freight vehicles, the existing stock of 420.000 vehicles requires to be increased significantly, due to the total flows to be

transported that will increase tenfold in thirty years.

Between purchasing for new capacity and purchasing for substitution, a total number of vehicles to be acquired is of 2,4 million units, with a total investment of the gigantic figure of 191 billion USD for the first scenario.

In the second scenario the demand pressure is almost the same, but the higher infrastructure investment allows to require less travel time (and kilometres), so the investment in new trucks is of 182 Billion USD. In the third scenario the investment is of 150 billion USD, that constitutes a very heavy burden in a situation of weak economic growth.

All these investments will be done by the private sector and it is what is required to capitalize the effects of the public investments in road infrastructures.

Table 79: Investments in the Railways sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
RAILWAY PROJECTS - INFRASTRUCTURE	Awash-Kombolcha – Haragaria	X	7	X	351		0	X	7	X	351		0	X	358		0		0
	Mekele – Haragaba	X	638	X	198		0	X	638	X	198		0	X	638	X	198		0
	Mekelle-Assab Port Railway			X	1.567	X	313			X	1.567	X	313			X	1.567	X	313
	Weldia-Wereta-Matema					X	3.084					X	3.084					X	3.084
	Mojo-Hawassa			X	995	X	199			X	995	X	199						
	Hawassa-Woo-Moyale			X	4.232							X	4.232						
	Sebeta-Jimma-Bedele-Booma South Sudan					X	4.834					X	4.834						
	Aisha-Berbera			X	934	X	187			X	934				X	934			
	Wereta- Finote Selam					X	1.296					X	1.296						
	Adama- Gasera					X	1.479												
	Ejaji- Kurmuk					X	2.760												
	Rejii - Holeta					X	511					X	511						
	Finote selam- Sebeta					X	1.821					X	1.821						
	Addis Ababa-Djibouti Upgrade 1	X	1028		0		0	X	1028		0		0	X	1028		0		0
	Addis Ababa-Djibouti Upgrade 2	X						X						X					
	Addis Ababa-Djibouti Upgrade 3	X						X						X					
		Total term		1.672		8.277		16.484		1.672		4.045		16.291		2.023		2.699	
	Total scenario					26.433						22.008						8.119	
RAILWAY PROJECTS - ROLLING STOCK	Total term		255		556		2.651		255		489		1.697		386		252		116
	Total scenario					3.461						2.440						754	

A relevant amount of railways investments is envisaged in the Plan.

The thirteen new railway lines, plus the upgrading of the existing Addis-Djibouti line brings to an investment in railway infrastructures of 26,4 USD Billions, plus 3,5 Billion of rolling stock. This in the Go-Ahead Scenario, that is the

most favourable for railways. In the other two scenarios the amount of investments is reduced to 22 plus 2,4 Billion USD for the second scenario and to 8,1 plus 0,7 billion USD in the third scenario, that reduces at the minimum the railways investment effort.

Table 80: Investments in the Aviation sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
AVIATION- INFRASTRUCTURE	Institutional Transformation Project	X						X							X				
	A - AERODROME PROJECTS	X						X							X				
	1 - Headquarter construction in Addis Ababa	X						X							X				
	2 - New tower in Addis Ababa airport expansion	X	1,329					X	1,329						X	1,329			
	3 - Tower and related construction in Shire Airport	X	0,865					X	0,865						X	0,865			
	4 - Tower and related construction in Jinka Airport	X	0,876					X	0,876						X	0,876			
	5 - Tower and construction in Hawassa Airport	X	0,719					X	0,719						X	0,719			
	6 - Tower and related construction in Assosa Airport	X	0,536					X	0,536						X	0,536			
	7 - Tower and related construction in Semera Airport	X	0,847					X	0,847						X	0,847			
	8 - Spare parts purchase for the Addis Ababa bole airport radar (PSR/MSSR) devices improvement project	X						X							X				
	9 - For ADS-B missing devices purchase and installation project	X						X							X				
	10 - For the purchase and installation project of different facilities for airports			X						X						X			
	11. For SSR (Approach MLAT) observation devices purchase and installation project	X						X							X				
	B - NEW PROJECTS TO START	X						X							X				
	1 - Building towers and air navigation facilities for Bahirdar, Nekemt and Dembidolo airports	X	2,774					X	2,774						X	2,774			
	2 - Building the Bridge from the Dire Dawa airport to Biken Bet	X						X							X				
	3 - Building towers and air navigation facilities for Mizan Aman, Gore Metu, Debre Markos, Yabelo and Negele Borena airports			X	5,548					X	5,548					X	5,548		
	4 - Building aviation academy center, aviation museum, simulated firefighting center, additional buildings and recreation center in the compound of the head office	X	13,870					X	13,870						X	13,870			
	5 - Purchasing and installing devices to upgrading the Aeronautical Information Service (AIS) to Aeronautical Information Management (AIM)	X						X							X				
	C - PROJECTS ON RESEARCH AND DESIGNING STAGE	X						X							X				
	Aerodrome Projects	X						X							X				
	1 - Tower designing for Bahir Dar, Nekemt and Dembidolo airports	X						X							X				
	2 - Design researching for the bridge from the Dire Dawa airport to Biken Bet	X						X							X				
	3 - Tower designing for Jimma, Mizan Aman, Gore Metu, Debre Markos, Yabelo and Negele Borena			X						X						X			

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
	4 - Designing the buildings of the aviation academy center, aviation museum, simulated firefighting center, additional buildings and recreation center in the compound of the head office	X						X							X				
	5 - Completing air navigation facilities and improving their services at respective standards of regional airports			X					X							X			
	6 - Upgrading the aeronautical voice information exchange between pilots and air traffic controllers to (VDL) VHF Data Link			X					X							X			
	7 - Changing the Navigation Aids from Ground Based to satellite (GNSS) flight procedure in order to modernize the air space considering the progress in air traffic			X					X							X			
	8 - Upgrading the country's surveillance to WAM			X					X							X			
	D – ADDITIONAL ACTIONS FOR INFRASTRUCTURE DEVELOPMENT	X						X							X				
	1 - New Ethiopia International Airport in Bishoftu, Oromia region					X	5000					X	5000						
	2 - Open airport in Nekemt	X	1,387					X	1,387					X	1,387				
	3 - New airport in Mizan Aman and Gore Metu			X	832,2				X	832,2					X	832,2			
	4 - New airport in Debre Markos, Negele Borena and Yabelo					X	832,2				X	832,2					X	832,2	
	5 - N. 6 new passenger terminals			X	832,2				X	832,2					X	832,2			
	6 - N. 10 new airstrips included in 10 Years Plan			X	832,2				X	832,2					X	832,2			
	7 - New airfields in Yabelo in addition to works already included in budget point B.3.			X	832,2				X	832,2					X	832,2			
	8 - N. 6 new passenger terminals at an estimated cost of Eur 80 million					X	111				X	111					X	111	
	9 - N. 10 new airstrips included in 10 Years Plan					X	1,665				X	1,665					X	1,665	
	10 a - Creating N. 2 cold storage facilities for air cargo at Dire Dawa and Hawassa	X	8,322					X	8,322					X	8,322				
	10 b - Creating N. 5 cold storage facilities for air cargo services at different airports	X	20,805					X	20,805					X	20,805				
	11 - Build cold rooms for pharmaceuticals storage at airports across the country.	X	0,5					X	0,5					X	0,5				
	12 - Build 5 additional airstrips not included in the 10 Years Plan	X	0,832					X	0,832					X	0,832				
	13 - Build 3 additional airports not included in the 10 Years Plan					X	150				X	150							
	14 - Additional investments in new Air Traffic Control technology equipment			X	120				X	120									
	15 - Additional investments for the creation of new vertiports and charging stations					X	40				X	40							

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
	for the use of electric vertical take-off and landing ('eVTOL') aircraft																		
	16 - N. 10 new and upgraded terminals and service areas at existing airports			X	40	X	60		X	40	X	60							
	Total term		54		3.494		6.195		54		3.494		6.195		54		3.334		945
	Total scenario						9.743					9.743							4.333
New Vehicles	New Aircrafts for National Service	X						X	0					X	0				
	Total term		0		0		5.695		0		0		5.695		0		0		5.695
	Total scenario						5.695					5.695							5.695

The Aviation infrastructure investments covered by the ETMP is rich in investments in new infrastructures for the national airport. Additionally, for the first two scenarios it is included also the new international airport in Bishofu, that alone worth 5 billion USD.

This implies infrastructure investments for a total of 9,7 Billion USD in the first two scenarios and of 4,3 Billion USD in the third scenario.

Beside it, the air carriers will have to face an investment of new fleet adjustment, for national flights, for an amount of 5,7 Billion USD.

Table 81: Investments in the Inland Water transport sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Inland Water Ways Sub-Sector	Tana Lake- Bahar Dahr Port	x	60,00					x	60,00					x	60,00				
	Chamo Lake-Arba Minch Port	x	25,00					x	25,00					x	25,00				
	Abaya Lake-Dila Port	x	60,00					x	60,00					x	60,00				
	Gibe River-Tama Wildlife Reserve Port			x	25,00					x	25,00					x	25,00		
	Gibe River Mago National Park Port			x	25,00					x	25,00					x	25,00		
	Baro River-Gambela Port			x	60,00					x	60,00					x	60,00		
	Baro River-Yuddo			x	60,00					x	60,00					x	60,00		
	Blue Nile-Renaissance Dam					x	60,00						x	60,00				x	60,00
	Blue Nile-Bazbes					x	60,00						x	60,00				x	60,00
	Blue Nile-Cherasi					x	60,00						x	60,00				x	60,00
	Tana Lake- Gorgora Port					x	60,00						x	60,00				x	60,00
	Gibe River-Koysha					x	60,00						x	60,00				x	60,00
	Total term		145,00		170,00		300,00		145,00		170,00		300,00		145,00		170,00		300,00
Total scenario						615,00						615,00						615,00	

The inland water ways sub-sector is in Ethiopia at the beginning of its development.

The 12 new lake or river ports will imply an investment of 615 million USD.

Due to the initial stage of this sub-sector, the amount of investments does not change in the three scenarios.

Table 82: Investments in the Urban sector in the three scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Urban Mobility sub-sector - Infrastructure	Investment for bike lane and NMT infrastructures & measures	x	35	x	89	x	1281	x	35	x	89	x	1281	x	35	x	89	x	1281
	Investment for bike sharing point	x	6	x	73	x	193	x	6	x	73	x	193	x	6	x	73	x	193
	Total term		41		162		1.474		41		162		1.474		41		162		1.474
	Total scenario						1.677												1.677
New Vehicles	Urban Bus Investment	x	948	x	2.108	x	7.801	x	948	x	2.108	x	7.801	x	948	x	2.108	x	7.801
	Long Distance Vehicles	x	191	x	498	x	908	x	209	x	525	x	891	x	178	x	389	x	249
	Bike Market Potential	x	24	x	960	x	3.902	x	24	x	960	x	3.902	x	24	x	960	x	3.902
	Total term		972		3.068		11.703		972		3.068		11.703		972		3.068		11.703
	Total scenario						15.743												15.743

The Urban Mobility sector envisages infrastructure investment mostly dedicated to the non-motorized strategy, in particular in bike lanes and in bike-sharing points. The infrastructure investments totalize an amount of 1,7 Billion USD.

In this sub-sector the major investments are in vehicles: a total of 15,7 billion is required to buy the buses for urban and intercity transport, and to consider the investments for privates in bikes.

Due to the social content of these investments, the amount of them is not dependent by the different scenarios.

3.8.2 The total amount of investments and their composition

In considering the total amount of investments it is useful the following classification:

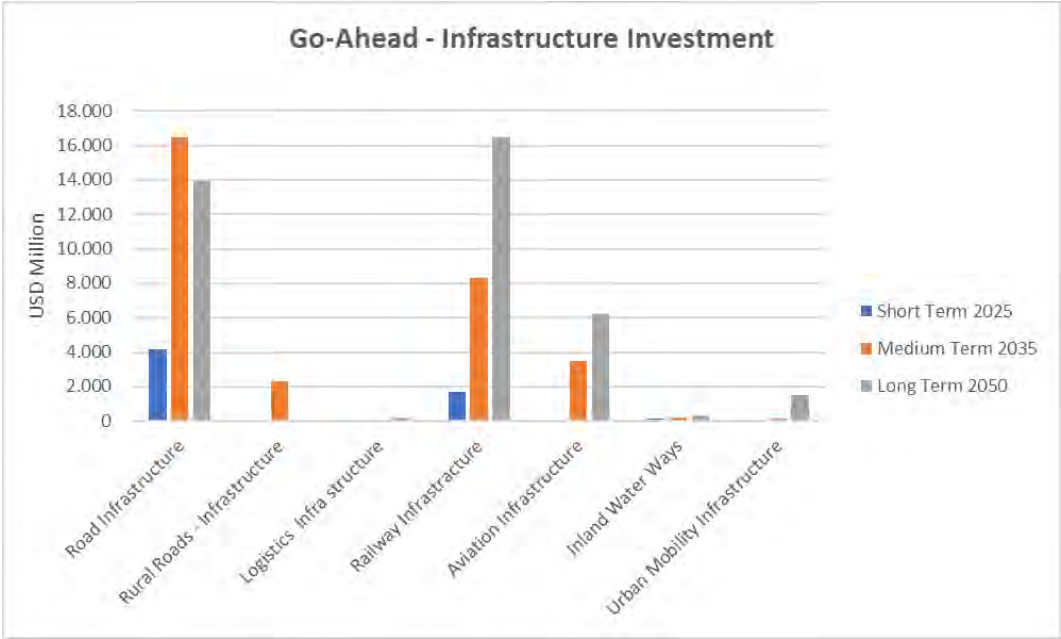
- Infrastructure investments, the one that are a mix of concrete and technologies, and
- are bound to a specific territory and allow, with public access, transport services to be developed on them.
- Vehicles to be invested by public entities;
- Vehicles to be invested by private entities.

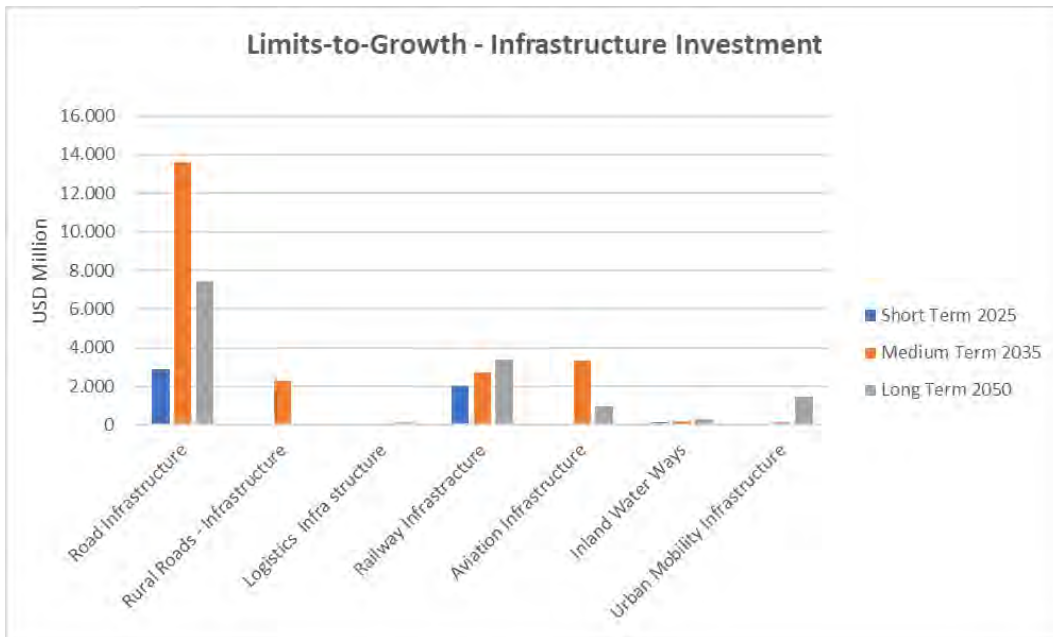
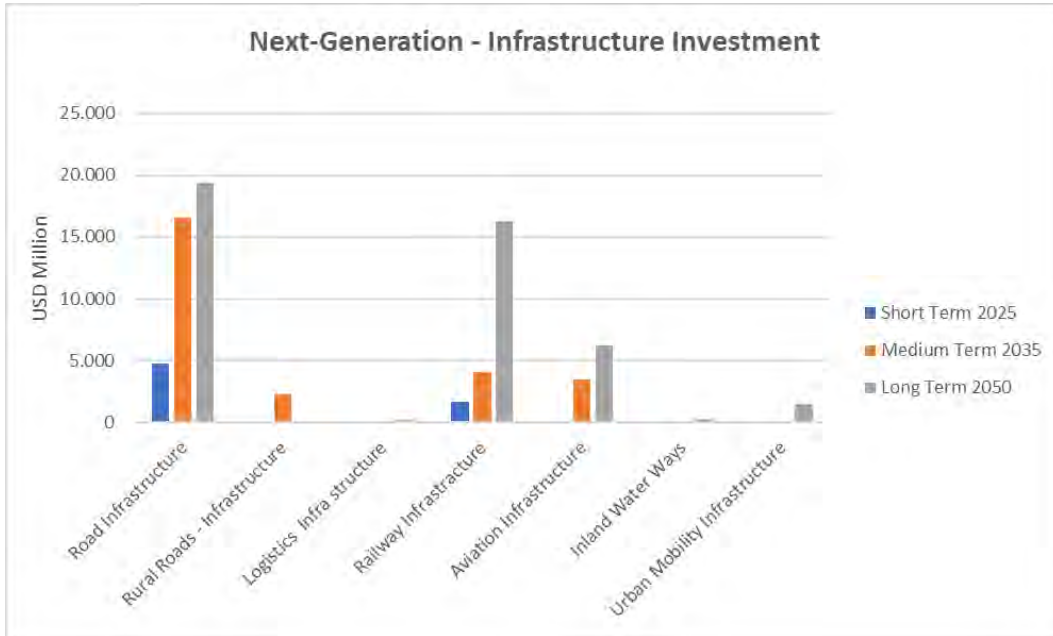
the PPP opportunities it is possible to refer to what is said in the specific chapter. The investments performed by the private sector considered in the study are just the ones in vehicles, to be used by commercial firms to develop transport services or to be used by the families. Also the private sector makes infrastructure investments, but that facilities are not open to the public, as for example warehouses in exclusive use, but this kind of investment cannot be considered in the National Transport Plan.

The investments to be done by the public sector is the total of the infrastructure investments plus the vehicles to be invested by public entities. The totals are before any PPP (Public-private participation) that can be organized for them. For

In the next figure it is synthesized the total infrastructure investments in the three scenarios: in all of them the main investments are performed by the Road sector (included rural roads) and by the railways sector.

Figure 34: Infrastructure Investments in the three scenarios

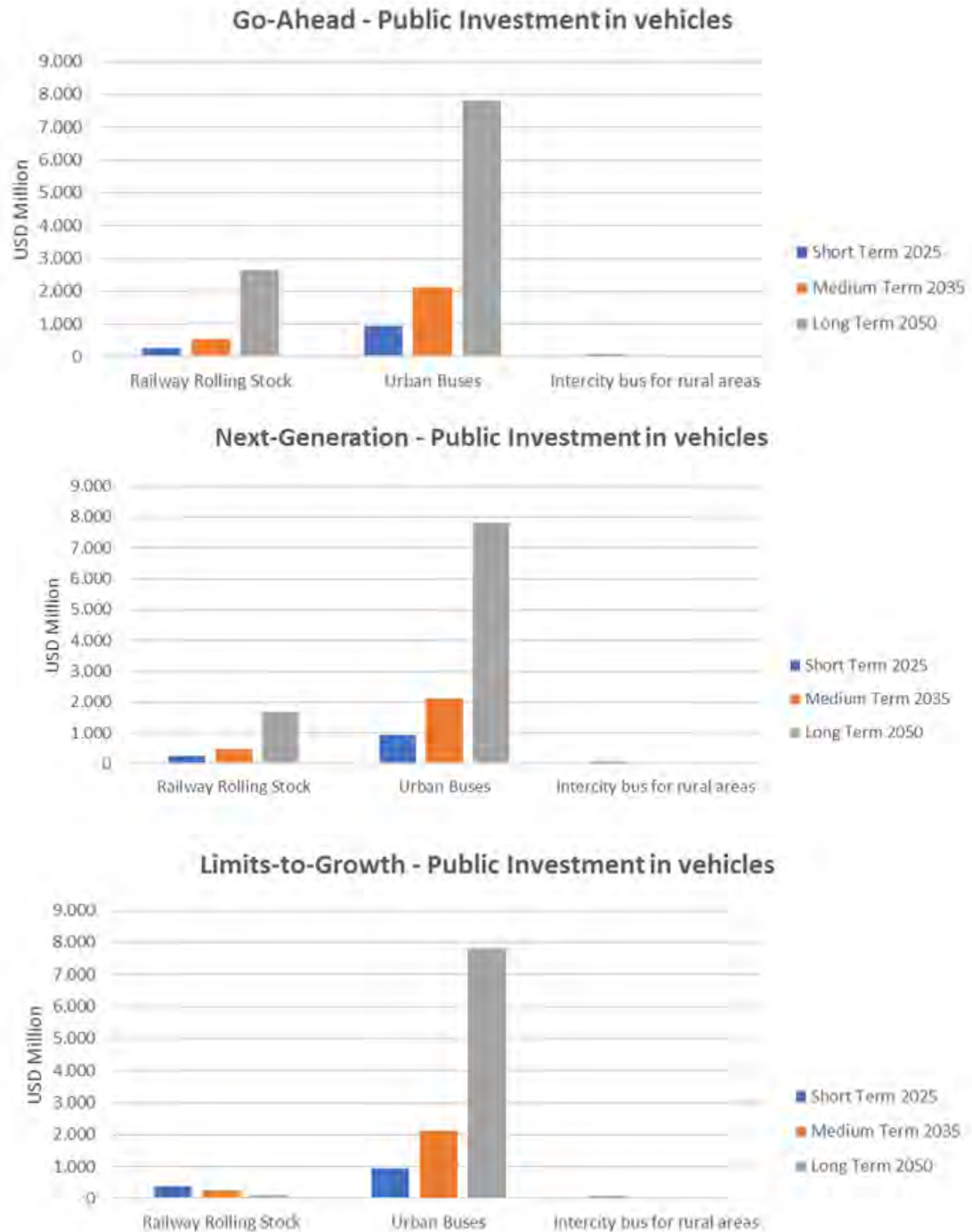




About the investments in vehicles performed by public entities, they are composed by the rolling stock for railway services (passengers and freight), by buses for urban services and by buses for the services in the rural areas, but requiring typically a subsidy to be economically performed.

In all the three scenarios, the major investments are the one on urban buses, followed by the railway rolling stock. It can be noted that in the third scenario the rolling stock required is minimized.

Figure 35: Investments in Vehicles performed by public entities in the three scenarios

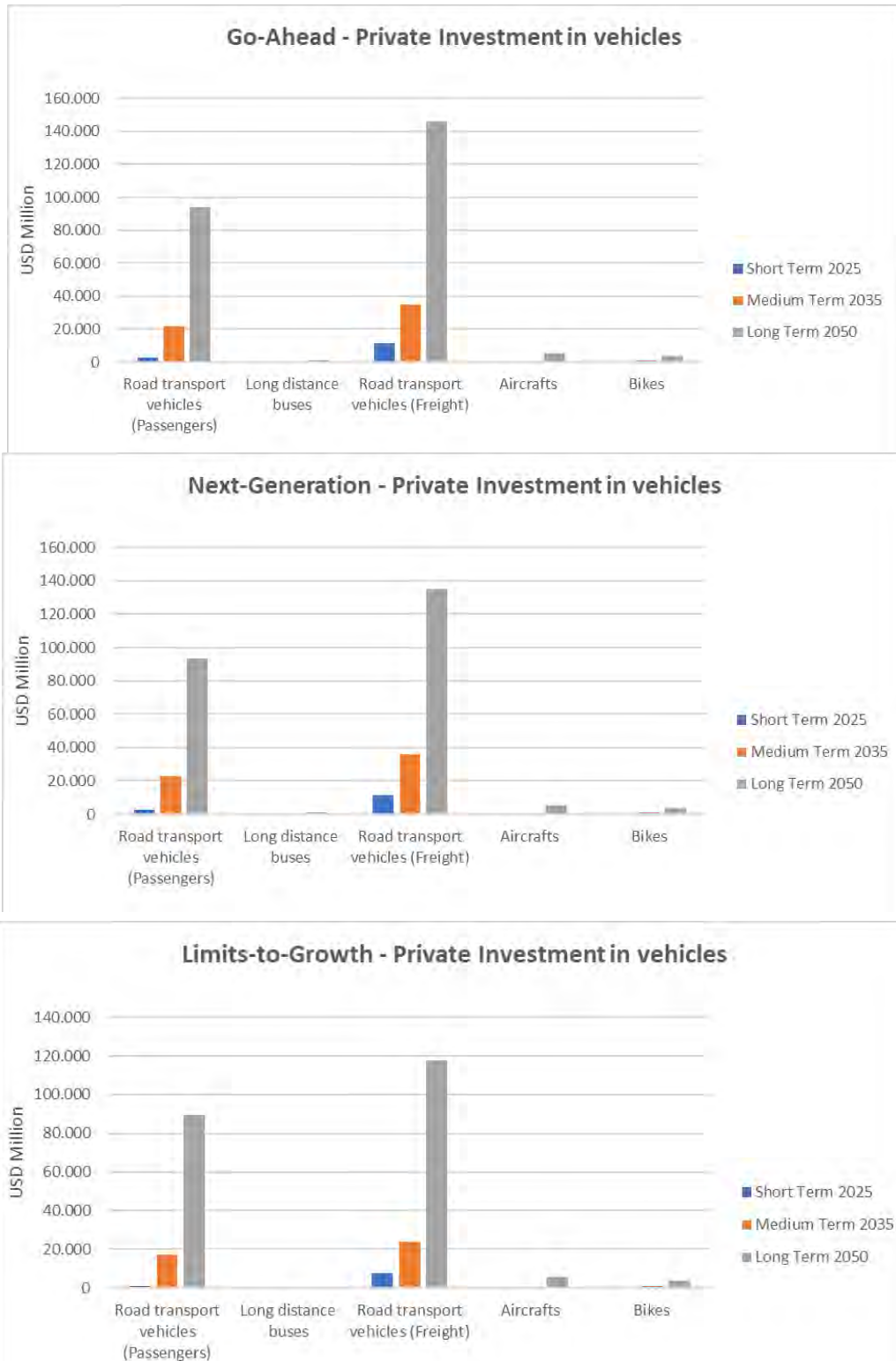


The investments in vehicles performed by the private sector are composed by road vehicles for passengers, by buses for long distance services, by road vehicles for freights, by aircrafts for national services and by bikes bought by privates as a consequence of the non-motorized strategy of the Government.

In this category of investments in all the scenarios the demand for private vehicles has an

explosive trend, typical in societies entering in the middle-income belt. Among them, the maximum amount is reached by the road freight vehicles (semi-trailers, trucks, lorries, special vehicles), that in the fifteen tears between 2035 and 2050n will exceed a cumulate expense of 140 billion USD in the Go- Ahead scenario.

Figure 36: Investments in Vehicles performed by private entities in the three scenario



If we consider the total value of thirty years investment in the three scenarios, the highest value, 412 billion USD is in the Go-Ahead Scenario, followed by the Next Generation Scenario with 404 Billion USD in the thirty years

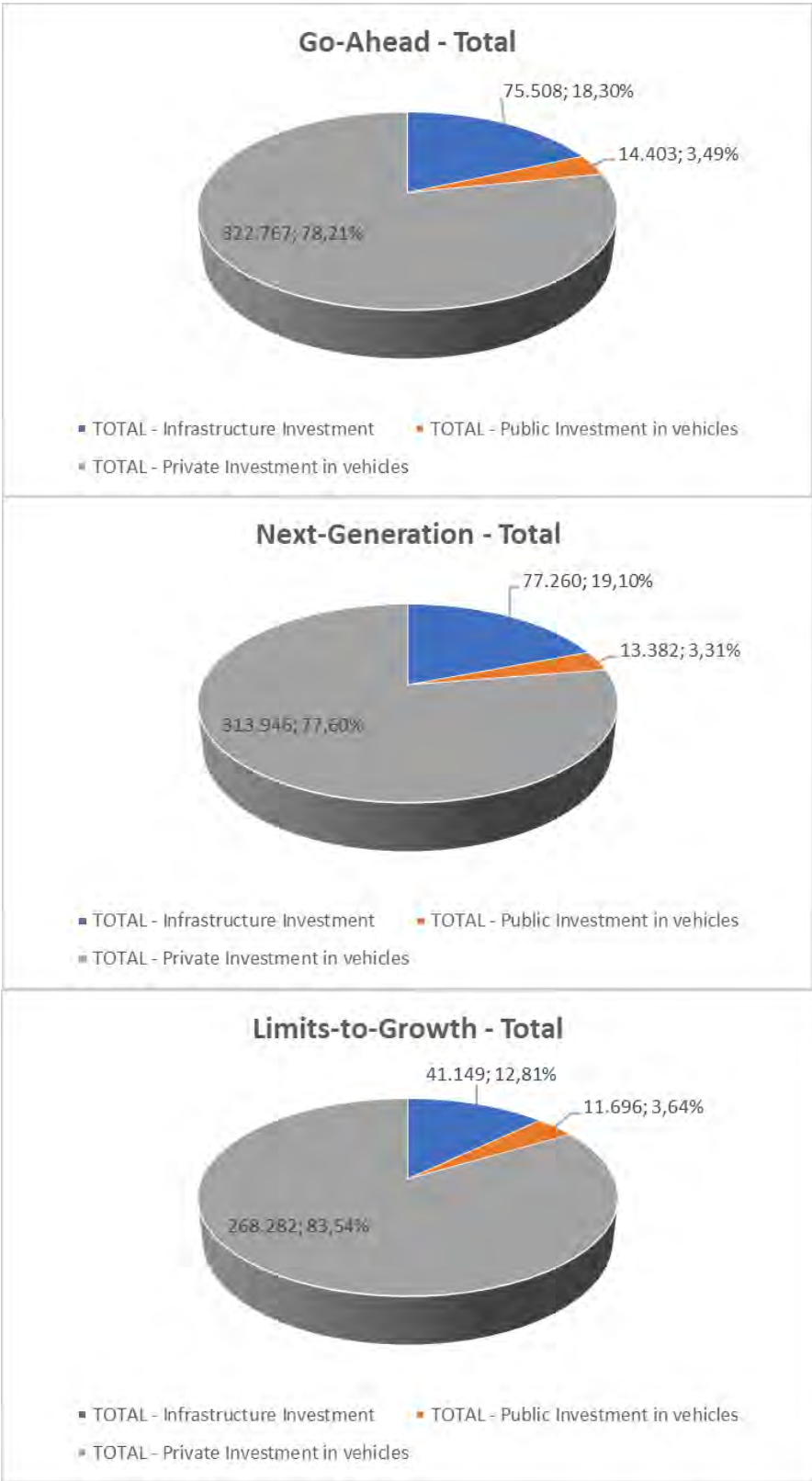
and by the Limits to Growth Scenario with 321 Billion USD.

The composition of the investments is similar in the three scenarios, with private vehicles being the greatest part (ranging from 77 to 83 %),

followed by the infrastructure investments (ranging from 12 to 19%), and by the public

vehicles that are a percentage between 3 and 4 %.

Figure 37: Composition of the total investments in the three Scenarios



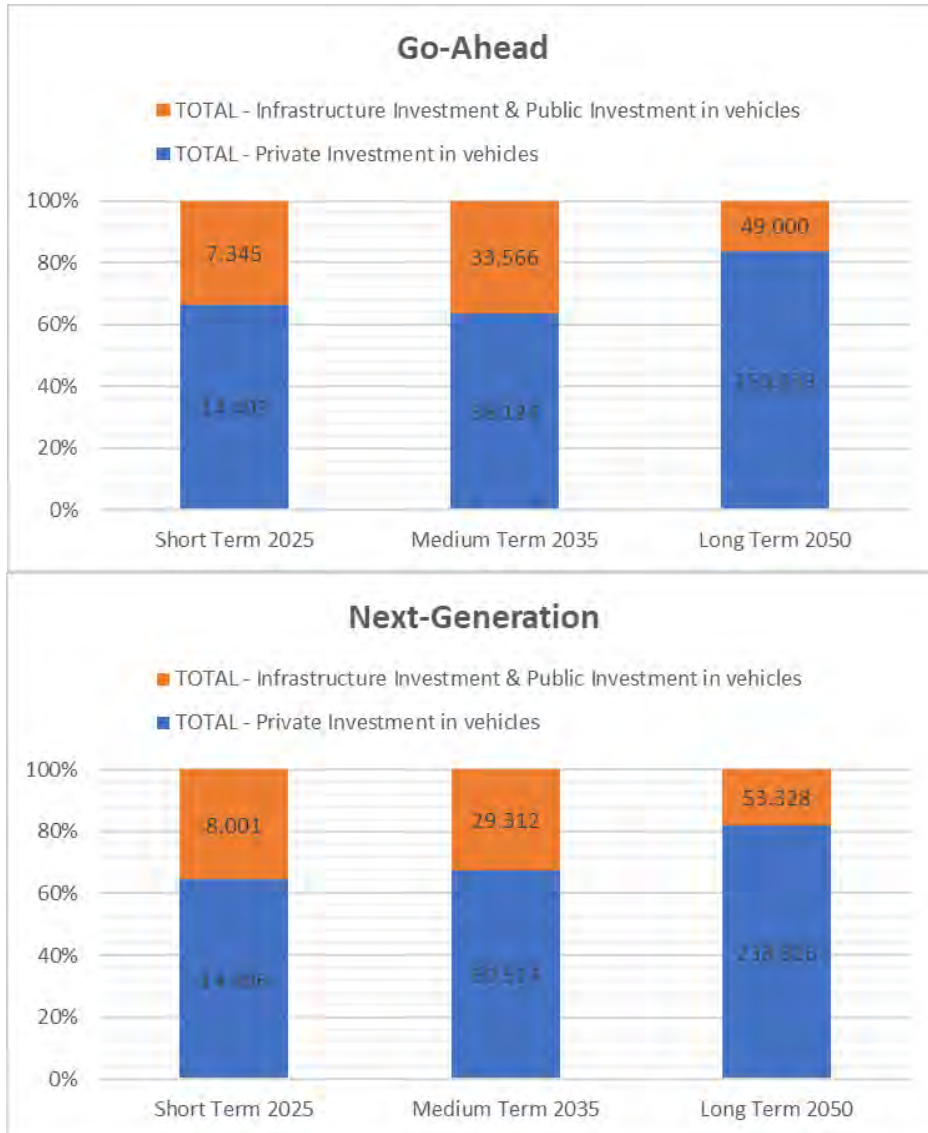
If we consider just the distinction between Public and private investments, it can be noted that the private component is higher in each term and in each Scenario, but this prevalence grows over time, particularly in the third Scenario, where the public sector will limit the direct investment.

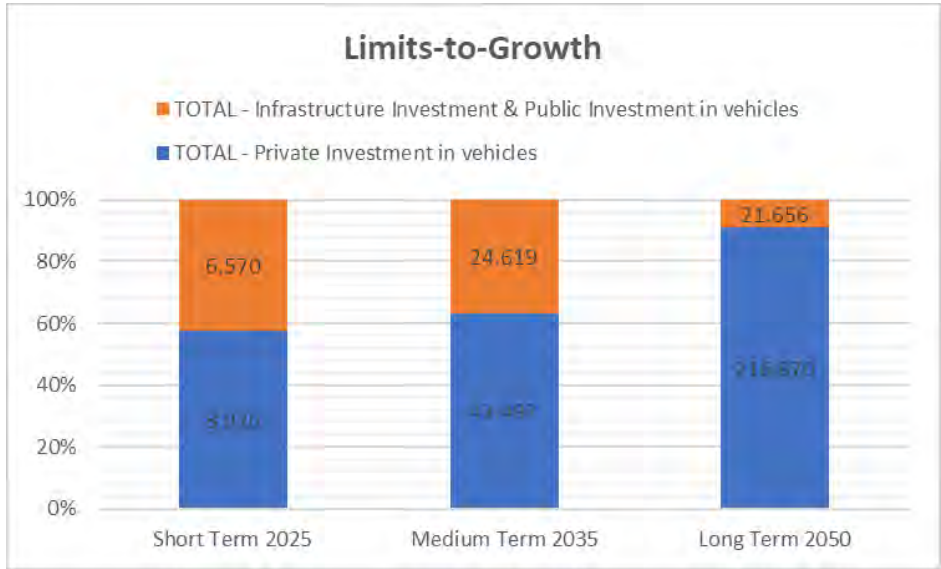
This result is perfectly logic: after many years of accelerated investments in infrastructures –

particularly roads – by the public sector, over time, with the growth of the demand for transport, the private sector makes its investment to make the best use of the public investment.

This result appears to be in line with the philosophy of the Homegrown Economic Reform, the new economic policy of the FDRE of Ethiopia.

Figure 38: Public and Private investments in the three scenarios





In the following tables are reported analytically the figures of the different kinds of investments coming by the sub-sectors.

Table 83: Infrastructure investments from the different sectors in the three Scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Road Infrastructure	Total term		4.127		16.497		13.907		4.784		16.542		19.383		2.874		13.594		7.473
	Total scenario						34.531						40.709						23.940
Rural Roads - Infrastructure	Total term		0		2.288		0		0		2.288		0		0		2.288		0
	Total scenario						2.288						2.288						2.288
Logistics Infra structure	Total term		19		14		188		19		14		188		15		12		149
	Total scenario						221						221						177
Railway Infrastructure	Total term		1.672		8.277		16.484		1.672		4.045		16.291		2.023		2.699		3.397
	Total scenario						26.433						22.008						8.119
Aviation Infrastructure	Total term		54		3.494		6.195		54		3.494		6.195		54		3.334		945
	Total scenario						9.743						9.743						4.333
Inland Water Ways	Total term		145		170		300		145		170		300		145		170		300
	Total scenario						615						615						615
Urban Mobility Infrastructure	Total term		41		162		1.474		41		162		1.474		41		162		1.474
	Total scenario						1.677						1.677						1.677
TOTAL - Infrastructure	Total term		6.057		30.902		38.548		6.714		26.715		43.831		5.152		22.258		13.739
	Total scenario						75.508						77.260						41.149
Railway Rolling Stock	Total term		255		556		2.651		255		489		1.697		386		252		116
	Total scenario						3.461						2.440						754
Urban Buses	Total term		948		2108		7801		948		2108		7801		948		2108		7801
	Total scenario						10.857						10.857						10.857
intercity bus for rural areas	Total term		85		0		0		85		0		0		85		0		0
	Total scenario						85						85						85
Total Public Investment in vehicles	Total term		1287		2664		10452		1287		2597		9498		1418		2360		7917
	Total scenario						14.403						13.382						11.696
Road transport vehicles (Passengers)	Total term		2911		21941		93804		2927		22904		93601		896		17012		89384
	Total scenario						118.655						119.432						107.292
Long distance buses	Total term		191		498		908		209		525		891		178		389		249
	Total scenario						1.597						1.625						816
Road transport vehicles (Freight)	Total term		11.277		34.725		145.931		11.336		36.135		134.836		7.822		24.131		117.641
	Total scenario						191.934						182.308						149.594
Aircrafts	Total term		0		0		5.695		0		0		5.695		0		0		5.695
	Total scenario						5.695						5.695						5.695
Bikes	Total term		24		960		3.902		24		960		3.902		24		960		3.902
	Total scenario						4.886						4.886						4.886
Total Private Investment in vehicles	Total term		14403		58124		250239		14496		60524		238926		8920		42492		216870
	Total scenario						322.767						313.946						268.282

Table 84: Public investments in vehicles from the different sectors in the three Scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Railway Rolling Stock	Total term		255		556		2.651		255		489		1.697		386		252		116
	Total scenario						3.461						2.440						754
Urban Buses	Total term		948		2108		7801		948		2108		7801		948		2108		7801
	Total scenario						10.857						10.857						10.857
intercity bus for rural areas	Total term		85		0		0		85		0		0		85		0		0
	Total scenario						85						85						85
Total Public Investment in vehicles	Total term		1287		2664		10452		1287		2597		9498		1418		2360		7917
	Total scenario						14.403						13.382						11.696

Table 85: Private investments in vehicles from the different sectors in the three Scenarios

Sectors	Investment	1 - Go-Ahead Scenario						2 - Next-Generation Scenario						3 - Limits-to-Growth Scenario					
		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050		Short Term 2025		Medium Term 2035		Long Term 2050	
		TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)	TIMING	AMOUNT (USD Million)
Road transport vehicles (Passengers)	Total term		2911		21941		93804		2927		22904		93601		896		17012		89384
	Total scenario						118.655						119.432						107.292
Long distance buses	Total term		191		498		908		209		525		891		178		389		249
	Total scenario						1.597						1.625						816
Road transport vehicles (Freight)	Total term		11.277		34.725		145.931		11.336		36.135		134.836		7.822		24.131		117.641
	Total scenario						191.934						182.308						149.594
Aircrafts	Total term		0		0		5.695		0		0		5.695		0		0		5.695
	Total scenario						5.695						5.695						5.695
Bikes	Total term		24		960		3.902		24		960		3.902		24		960		3.902
	Total scenario						4.886						4.886						4.886
Total Private Investment in vehicles	Total term		14403		58124		250239		14496		60524		238926		8920		42492		216870
	Total scenario						322.767						313.946						268.282

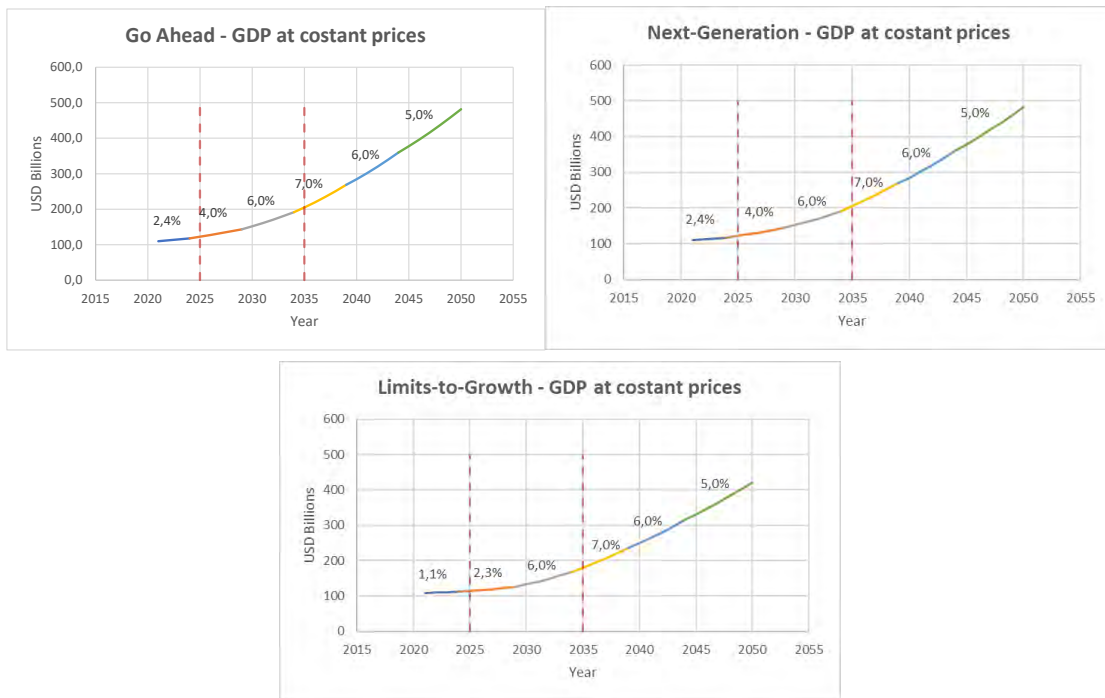
3.8.3 The economic sustainability of the ETMP

The economic sustainability of the investments envisaged in the ETMP will be very much dependent on the evolution of the economic development that Ethiopia will have in the next thirty years.

In order to have a clear vision of the phenomena, the yearly GDP growth hypothesized in the three scenarios has been applied to the official GDP level of 2020. In the following figure the

evolution of GDP in USD at constant prices has been reported: the first two scenarios share the same hypothesis of higher growth, in connection with the success of the Homegrown Economic Reform. In these two scenarios the GDP grows approximately five times in the next thirty years, going from 107 billion USD of 2020 to 481,8 Billion in the 2050.

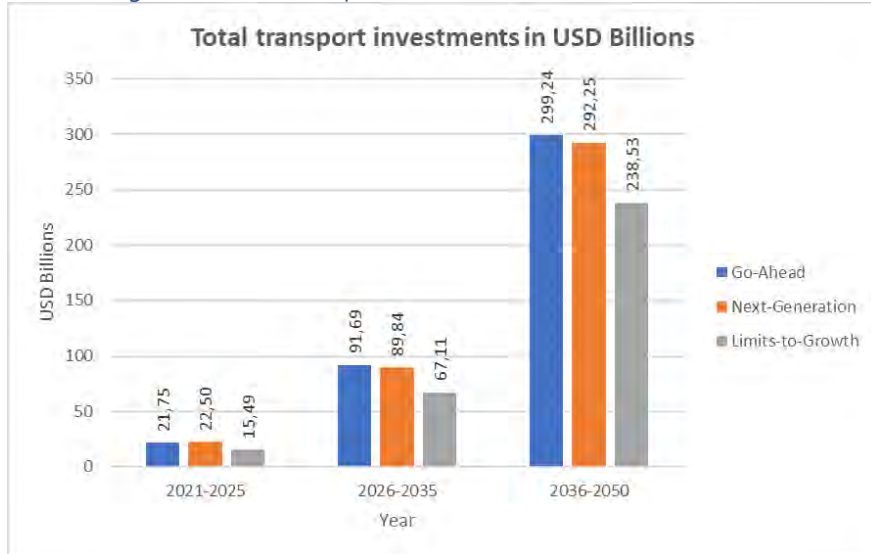
Figure 39: GDP's growth projections



In the "Limit to growth scenario" the GDP increase is reduced in the first ten years, and then the growth rate of GDP is the same of the other scenarios. This brings the GDP of 2050 up to a level of 421,6 Billion USD.

Considering the GDP evolution is now possible to refer the amount of investments in each scenario to the corresponding level of GDP. In the next figure are shown again the total transport investments (infrastructure plus vehicles, both public and private), for each time horizon.

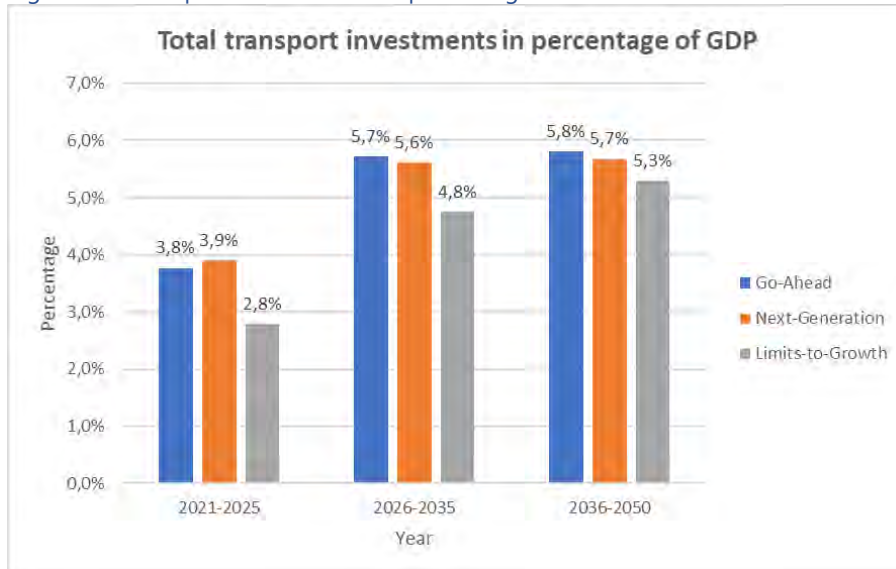
Figure 40: Total transport investments in the three Scenarios



In the figure that follows the investments are reported as percentage of the GDP of the same period:

- In the “Go-Ahead” scenario the percentage of transport investments of GDP grows progressively from the 3,8% in the short term to the 5,7% in the medium term, stabilizing at 5,8% in the long term;
- In the “Next generation” Scenario the evolution is similar (even though the composition of the investments is quite different), and the percentage evolves from 3,9% in the short term to the 5,6% in the medium term, reaching 5,7% in the long term;
- In the “Limits-to-growth” Scenario the percentage is significantly lower in the short term, at 2,8%, reflecting the public and private budget difficulties in that period. Then, with the recovery of a higher growth, also the percentage on GDP grows, arriving to 4,8% in the medium term and at 5,3% in the long term.

Figure 41: Transport investments as percentage of the GDP in the three scenarios



To judge how sustainable, from a macro-economic point of view, are these percentages of GDP it is necessary to refer to the present situation: as shown in the next figure in 2020 the transport and Communication sector has been

the sixth sector for importance, being the 4,4% of GDP.

The percentage shown in the three Scenarios in the short term are similar, then in the medium

and long term the higher investments will presumably allow a growth of the Added Value of the transport faster than the economy, and will

lead to percentage of transport investments of GDP again similar to the increased percentage of the GDP of the transport sector on the total GDP.

Figure 42: GDP by main Sub-sectors – Year 2020



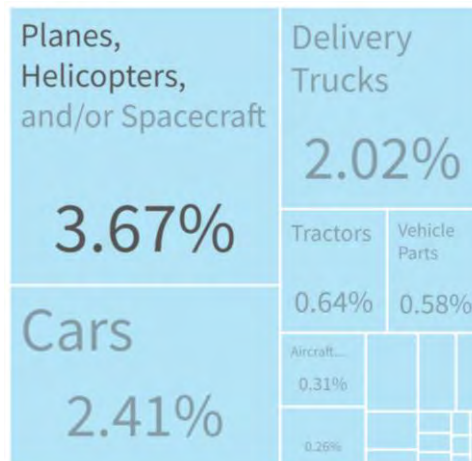
The critical point of the sustainability appears to be the sustainability of the imports generated by the transport sector, and particularly the one connected with the import of vehicles.

It must be considered that already in 2020, as shown in the next figure, the percentage of imports of vehicles was a percentage of the total

imports of more than 10%, well higher than the percentage of the sector in terms of GDP.

It must also be considered that, according to the investments envisaged in the Plan, the investments in Vehicles will show a fast growth, particularly after the 2025.

Figure 43: Imports (2020) as percentages of total Ethiopian imports



This appear to be the most serious threat for the development of the transport sector and for the sustainability of the ETMP.

The issue should be approached from two different sides:

- On the first side the export expansion, awaited since a number of years should finally materialize, driven from the export coming from the industrial parks and from the hydro-power energy excess generated by the Dams program. This would help to rebalance the burden that the transport sector risks to put on the international payments;

On the other side, it is of the utmost importance the acceleration of the Government Programs to create an automotive national industry, already started with alliances with global players to build assembling automotive factories in Ethiopia. The goal should be to devote the investments in new vehicles mainly on national products, with a more limited impact on the FX constrain.

In conclusion, the success of an “import substitution Policy” in the vehicles industries, particularly for the freight vehicles, is a vital element for the economic sustainability of the plan.

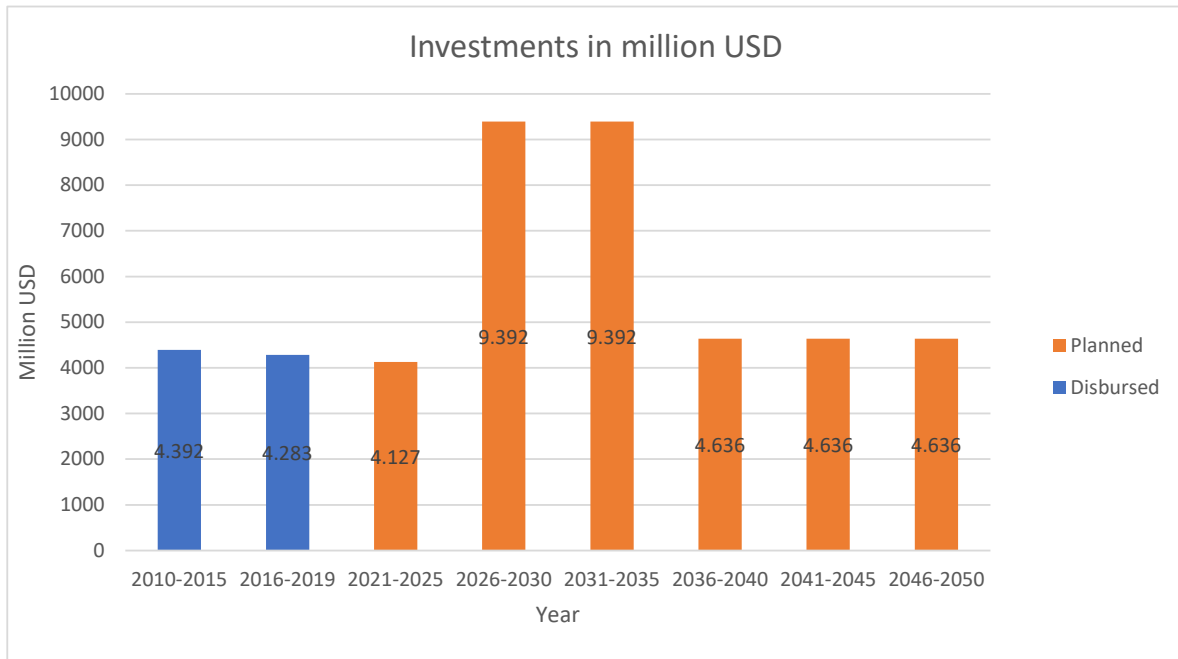
3.8.4 The forecasted spending compared to the recent trends

An important element of evaluation of the total investment profile of the ETMP is to compare the historical spending with what is envisaged in the next years.

Under this point of view the most significant and coherent source of data on the historical spending of the sector is the Road Sector Development Program-22 Years Performance Assessment Report of the former ERA.

In the following table it will be compared the expenses for road infrastructure investments, by far the main public investments of the Public sector in Transport in recent years, with the corresponding investment included in the base scenario of ETMP. The figures refer to the spending of the five years period.

Figure 44: Historical spending and projected spending in road infrastructures



As it can be seen, the investments in the different elements of road infrastructure totalized a value of 4.392 million USD in the period 2010-2015, and then in the four years 2016-2019 the spending grew up to 4.283 million USD. The ETMP forecasted road infrastructure investments (included Rural Roads) will be of 4.127 million in the 2021-2025. The reduction in the short run can be explained partly for the slowdown of the economy in this phase, and partly it is necessary to live room to the other modal investments, that have been underexploited in previous years, particularly the urban sector and the logistics sector.

In the decade 2026-2035 the average investments will increase significantly, reaching the spending of 9.392 million USD in each of the five years period, and then in the final fifteen years of the plan the spending will reduce again, reaching an average spending of 4.643 million per five years sub-period. This reduction is required to allow to divert part of the resources to the investments in road vehicles, both passenger and freight, that in the second half of the plan will reach unprecedented levels.

In conclusion, the investment profile seems to be realistic and coherent with the general conditions of the expected evolution.

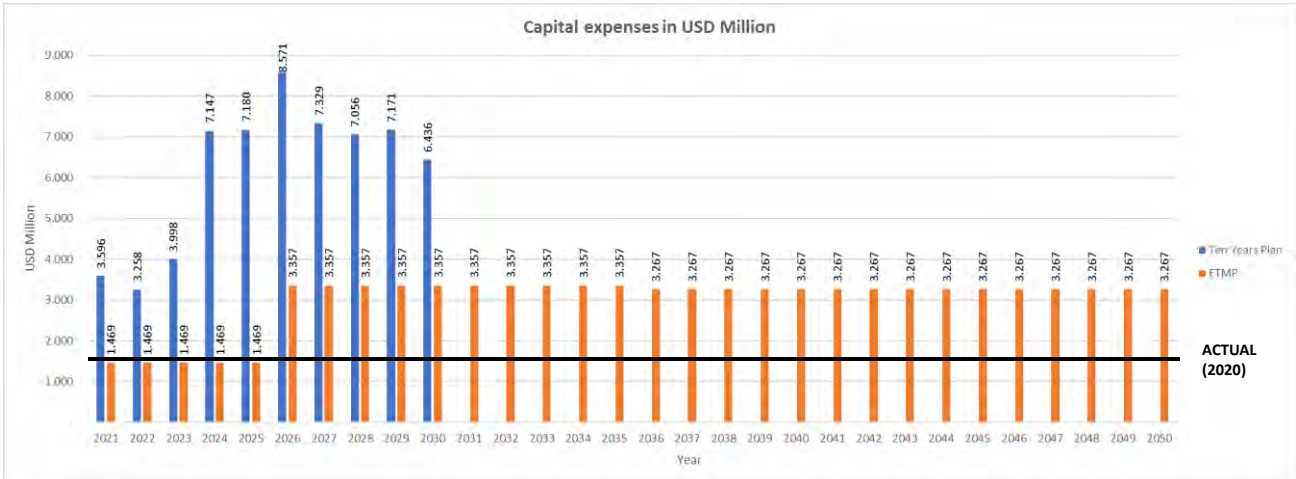
3.8.5 The ETMP spending compared to the ten Years Plan

The final analysis is devoted to a comparison between the spending envisaged in the ten years plan for the transport sector, released officially in August 2020 and the spending profile of the ETMP in the same 2021-2030 period (base scenario). The comparison will be done just for capital expenses, as the ten years plan plots also some current expenses, while this category of expenses is out of the Investments totalization of the ETMP.

The starting point, reported in the ten years plan is the investments expenses in 2020. Transformed the ETB in USD at the rate of that period, the actual expenses in capital goods totalized 1, 6 Billion USD, that is a percentage of 1,52% of the GDP of the year (see following figures).

In the following figure are reported the yearly capital expenses of the ten Years Plan and the ones of the ETMP in the same period.

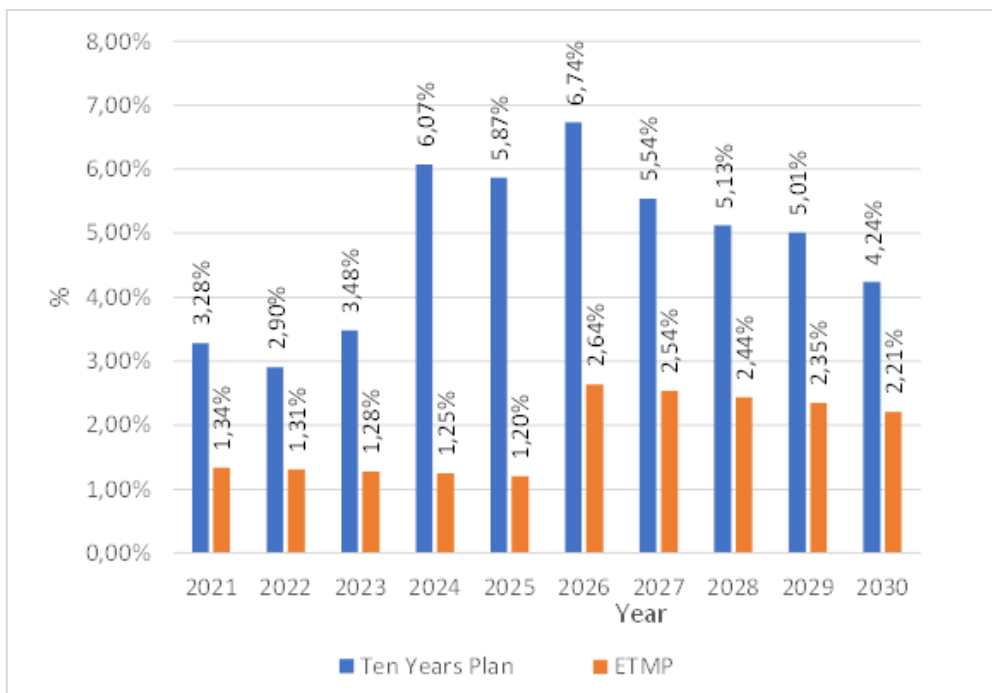
Figure 45: Capital expenses in the TYP and in the ETMP



The two profiles are very different: in the first year of the TYP the investments are already more than doubled than in the actual 2020 figure, going from 1,6 billion to 3,6 billion. In the 2024 the investment amount of the TYP doubles again, reaching 7,1 Billion USD, and continue increasing up to the peak of 8,6 Billion in the year 2026. In the following years there is a smooth slowdown, between 7,4 and 6,4 Billion per year.

The investment profile of the ETMP for the public sector (the one comparable with the variables exposed in the TYP) is more conservative, and has, in the first five years, a level slightly lower than the 2020 level: 1,47 Billion compared with the 1,62 of the actual figures of 2020. Then it doubles in the following five years, reaching the yearly value of 3,57 Billion USD per year.

Figure 46: Capital expenses in the TYP and in the ETMP as percentage of the expected GDP



A better judgement on the economic sustainability of the two profiles can be expressed comparing the series expressed as percentage of GDP expected in the base Scenario (Go-Ahead), exposed in the figure above.

While the ETMP profile remains in a range of percentage of the GDP between 1,3 and 2,6%, the same range of the 2020 actual figure (1,52%), the TYP profile ranges from 2,9 and 6,7% of GDP.

If we consider that these figures do not include the investments in vehicles of the private sector,

that in the first five years add a further 2% of the GDP and in the following five years reach the level of 4,8% of the expected GDP, it is easy to conclude that a more conservative profile helps the sustainability of the plan.

Finally, it must be considered that most of the infrastructures planned in the ten years plan are

included in the ETMP, at a date when the transport demand growth justifies the necessity of the infrastructures. This underlines the importance of the transport demand factor, assured in the ETMP by the transport mathematical model built on purpose.



የትራንስፖርት እና ሎጂስቲክስ ሚኒስቴር
MINISTRY OF TRANSPORT AND LOGISTICS

ETHIOPIAN TRANSPORT MASTER PLAN POLICY AND STRATEGY 2022-2052