



The World Bank

Ethiopia Roads Development Program for Results (P176303)

Program Information Document (PID)

Concept Stage | Date Prepared/Updated: 04-Oct-2021 | Report No: PIDC246931



BASIC INFORMATION

A. Basic Program Data

Country Ethiopia	Project ID P176303	Parent Project ID (if any)	Program Name Ethiopia Roads Development Program for Results
Region AFRICA EAST	Estimated Appraisal Date 13-Jun-2022	Estimated Board Date 18-Aug-2022	Does this operation have an IPF component? No
Financing Instrument Program-for-Results Financing	Borrower(s) MINISTRY OF FINANCE	Implementing Agency ETHIOPIAN ROADS AUTHORITY, MINISTRY OF TRANSPORT, Regional Roads Authorities	Practice Area (Lead) Transport

Proposed Program Development Objective(s)

The PDO is to enhance the accessibility of target populations served by selected rural roads to markets, and to economic and other social services.

COST & FINANCING

SUMMARY (USD Millions)

Government program Cost	774.00
Total Operation Cost	774.00
Total Program Cost	774.00
Total Financing	774.00
Financing Gap	0.00

FINANCING (USD Millions)

Total World Bank Group Financing	300.00
World Bank Lending	300.00

**Total Government Contribution**

474.00

Concept Review Decision

The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **Ethiopia is the second most populous nation in Africa, and till recent times been the fastest growing economy in the region (World Bank, 2019).** Ethiopia is a large and diverse country, with significant potential to reap both its geographic and demographic dividends. With an estimated population of over 115 million¹, out of which more than 80 percent live in rural areas, the country is undergoing a fast demographic transition with a rapidly rising working-age population that presents both opportunities and challenges. Ethiopia's economy experienced strong, broad-based growth averaging 9.4 percent a year from 2010/11 to 2019/20, resulting in a dramatic increase in GNI per capita, from US\$140 in 2004 to US\$850 in 2019.

2. **Ethiopia's growth strategy has been driven by a massive public infrastructure investment programme which reached almost a quarter of the country's gross domestic product in 2014 and has accounted for around half of all growth in the economy since 2011.** Spending on roads has been about 4 per cent of GDP every year over the last five years, and the Addis Ababa-Djibouti Railway has cost Ethiopia about \$4.5 billion (almost 5 percent of country nominal GDP), supporting strong growth in agriculture and services.

3. **Higher economic growth contributed to positive trends in poverty reduction in both urban and rural areas.** The share of the population living below the national poverty line decreased from 30% in 2011 to 24% in 2016. The government has been implementing the second phase of its Growth and Transformation Plan (GTP II) which aims to have Ethiopia achieve low middle income status by 2025. GTP II aims to continue expanding physical infrastructure through public investments and to transform the country into a manufacturing hub. GTP II targets an average of 11% GDP growth annually, and in line with the manufacturing strategy, the industrial sector is set to expand by 20% on average, creating more jobs.

4. **Despite achieving fast growth, the limitations of the state-led development model have become evident, as external competitiveness has eroded and imbalances have increased.** Notwithstanding substantial investments in infrastructure to support future growth, Ethiopia's recent economic success has occurred in a context of modest structural economic transformation and still-incipient domestic private sector development. The shortcomings of the growth model have become apparent in recent years. For example, merchandise exports, dominated by coffee and oil seeds, dropped from 8.6 percent of GDP in FY11 to 3.4 percent in FY18, due to falling commodity prices and an overvalued currency. Poor export performance coupled with an ambitious public infrastructure investment agenda have placed the economy at high risk of debt distress.

5. **Recognizing the shortcomings of the previous development model, the Government of Ethiopia initiated a comprehensive reform program in September 2019.** The Homegrown Economic Reform Agenda (HGERA) was set to

¹ United Nations. 2020. "World Population Dashboard, Ethiopia." January 2021, <https://www.unfpa.org/data/world-population/ET>



build upon the foundation laid by the Growth and Transformation Plan (GTP) II. Amongst the key set of reforms under HGERA, the government proposed to modernize the country's stock of transport infrastructure with ambitious goals to increase coverage, quality, safety, resilience, and efficiency.

6. Government is placing a lot of emphasis on industrialization as it seeks to achieve middle income status by 2025. To facilitate industrialization, the Government strengthened its institutional, legal, and regulatory framework with a focus on promoting Foreign Direct Investment (FDI) in light manufacturing, especially in the form of industrial parks. However, inefficiencies in trade logistics represent a major challenge to enhancing competitiveness, especially in light manufacturing.² Therefore, to ensure that the manufacturing sector gains from the regional connectivity created through the Addis-Djibouti corridor, it is important to address connectivity gaps from industrial parks to the main corridors. For the industrialization agenda to be successful, the areas and centers selected for these activities have to be properly connected along the full logistics chain, right from the factories to the final centers of consumption (internal or external) with good condition, safe, climate resilient roads across the functional classification spectrum: federal link roads, regional roads, woreda roads, and urban roads.

7. At the same time, agriculture remains a dominant source of employment. 66 percent of the labor force in Ethiopia remains engaged in agriculture but labor productivity with the sector remains low. Adoption of new technologies remains critical for improving agricultural productivity. In this context, available evidence shows that four factors—extension agents, roads, education, and incentives—are associated with increasing adoption of improved farming technologies in Ethiopia.³ In rural areas, poverty reduction was driven by improved infrastructure and connectivity, as well as good agricultural growth. Rural connectivity has improved considerably since 2010 but poor market access remains a binding constraint for farmers. The poor largely depend on agriculture and casual labor for their livelihood and are relatively isolated from key infrastructure such as roads and market. For example, 57 percent of the poor live more than three kilometers away from an all-weather road⁴, compared to 45 percent of the non-poor. In rural areas, remoteness from roads and population centers is also associated with lower welfare levels⁵. Providing all-year round road accessibility to rural areas especially the agriculturally productive ones, is critical to sustaining the large rural population, and contributing to agricultural productivity and competitiveness, economic development, and poverty alleviation goals.

8. The Country's development scheme relies heavily on Agricultural Development Led Industrialization (ADLI). This entails that the growth of the rural economic sector (agricultural sector) in terms of products and productivity is very critical for the overall domestic product growth. There is need to improve the competitiveness of the strategic agricultural value chains. That is why it is of paramount importance to improve accessibility to various services for communities living on agricultural production especially by enabling them to easily obtain agricultural inputs and bring their products to the market. While lots of progress have been made and are being made on the main trunk and link road network, the rural roads (at the regional and woreda levels) need significant improvement in quality to ensure all-year round access. Upgrades of this rural road network and ensuring the provision of critical bridges will ensure that the full logistics chain serving the agriculture sector is catered for and help to significantly reduce the costs of transportation. Rural roads that link to areas of high agricultural potential will be prioritized for financing in the proposed program. The program design

² Source: World Bank (2016). Ethiopia's Great Run: The Growth Acceleration and how to pace it. Washington DC. © World Bank Available at: <http://documents1.worldbank.org/curated/en/693561467988949839/pdf/99399-REVISED-PUBLIC-thiopia-Economic-Update-2-11-16-web.pdf>

³ Source: World Bank (2016). Ethiopia's Great Run: The Growth Acceleration and how to pace it. . Washington DC. © World Bank Available at: <http://documents1.worldbank.org/curated/en/693561467988949839/pdf/99399-REVISED-PUBLIC-thiopia-Economic-Update-2-11-16-web.pdf>

⁴ The standard Rural Accessibility Index distance is two kilometers. This will be streamlined as program preparation advances.

⁵ Source: World Bank (2020). Ethiopia Poverty Assessment: Harnessing Continued Growth for Accelerated Poverty Reduction. Washington DC. © World Bank. Available at: <http://documents1.worldbank.org/curated/en/992661585805283077/pdf/Ethiopia-Poverty-Assessment-Harnessing-Continued-Growth-for-Accelerated-Poverty-Reduction.pdf>



will draw heavily on the design elements of the pipeline preparation of the Ethiopia Integrated Agricultural Development Project (IADP); P176167. The refinement of the program boundary will consider the suggestions for geographical targeting under the IADP.

9. Despite the progress, Ethiopia remains among the 20 poorest countries in the world, with a per capita income of US\$856 (2019). Vulnerability to return to poverty remains high, especially for those engaged in rural livelihoods depending on rain-fed small-scale agriculture. In addition, Ethiopia hosts more than 920,000 refugees, primarily from neighboring Somalia, Sudan, South Sudan, and Eritrea, and the number of internally displaced persons (IDPs) has risen from 1.6 million to 2.8 million since the beginning of 2018. Access to education has increased, but only 57 percent of children starting first grade will complete ninth grade. With regard to gender-based disparities, Ethiopia has made some significant improvements. The Global Gender Gap report of 2020 ranked Ethiopia 82 out of 149 countries, with an improvement of 35 positions compared to 2018. Nevertheless, significant and deeply engrained disparities remain, and a combination of cultural norms and socioeconomic inequality greatly increases the risks faced by women in terms of their well-being. The country is particularly lagging in terms of economic participation and educational attainment where the rank is 125 and 140, respectively. Addressing gender inequalities in terms of access to education and decision-making, rights, unpaid labor, land, and productive resources is a crucial ingredient for economic growth in the country.⁶

10. While the extent of the impact currently remains unclear, the COVID-19 pandemic will likely have implications on the livelihoods of poor households. On the external side, the COVID-19 crisis has affected exports, remittances, and foreign direct investment (FDI). While merchandise export value grew by 12 percent (year on year) in FY2020, this is the result of the pre-COVID-19 performance, as exports of goods have dipped in recent months. Meanwhile, private transfers and FDI declined by 10.2 percent and 19.8 percent, respectively, during FY2020. Domestically, containment measures and transport disruptions have affected people and firms, which have reportedly experienced income losses, affecting private consumption and investment. Employment rates plunged in the early days of the pandemic, with 14 percent of respondents in a recent survey losing their job at the beginning of the outbreak. Driven by food prices, inflation continued trending up, reaching 24.6 percent in July 2020, although the upward trend was observed even before COVID-19.

11. The macroeconomic impact and reduction in government revenue will put pressure on its provision of social services. In response to the observed and anticipated COVID-19 impacts, monetary policy has been relaxed to provide liquidity to commercial banks and facilitate the reprofiling of loans for creditors under difficulties. Reserve money grew by 22.8 percent in FY2020, against a pre-COVID-19 target of 12.5 percent, supporting those liquidity injections as well as financing to the government. Tax revenue is estimated to have declined from 10 percent of gross domestic product (GDP) in FY2019 to 8.6 percent of GDP in FY2020, as collections of corporate income tax and value added tax, among others, falter. Meanwhile, recurrent expenditure increased by 1.5 percent of GDP in FY2020, driven by the increase in the COVID-19-related expenses (including health care and food security support during the crisis). Reflecting the significant disruptions in economic activity caused by the COVID-19 contention measures, as well as the weakening of household income and demand, Ethiopia's real gross domestic product (GDP) growth slowed down to 6.1% in 2019/20 due to COVID-19 (World Bank 2021).

12. Ethiopia is a large landlocked country with a heavy rural population (81 percent), for which the connectivity to markets, and to other economic and social services is of paramount development importance. Rural roads are the

⁶ Estimates indicate that reducing basic gender inequalities in education and the labor market could increase the annual GDP growth in Ethiopia by around 1.9 percentage points—which would be an important contribution to poverty reduction given the elasticity of growth to poverty reduction. World Bank. 2009. “Ethiopia: Unleashing the Potential of Ethiopian Women – Trends and Options for Economic Empowerment.” World Bank, Washington, DC.



important last mile link in any agricultural and manufacturing supply value chain, and are also critical for the access of the population to schools, health centers, hospitals, to jobs, and to other administrative services.

13. Ethiopia is also a country with a large land area and a diverse topography, resulting in different climates across the country posing varied climate risks. Temperatures have been increasing with higher rates of warming being observed in the central and highland areas. There is a strong regional variability in rainfall as well as significant inter-decadal and year-to-year volatility. Ethiopia has a high risk of hydro-meteorological hazards and natural disasters such as flooding and drought. Flash floods and riverine floods regularly cause crop and infrastructure damage. Climate projections show a continued increase in temperature and increased rainfall variability.⁷ Climate change is expected to increase the risk and intensity of flooding as well as increase the likelihood of water scarcity in some areas of the country. Land degradation and soil erosion is expected to be exacerbated by recurrent floods and droughts. The variability of rainfall patterns is expected to add to the risks of food security and climate vulnerability of communities.

Sectoral (or multi-sectoral) and Institutional Context of the Program

14. As Ethiopia is moving towards becoming a middle-income country by the year 2025, the transport sector plays a vital role in the country's economic and social development. Roads are a critical lifeline for a country like Ethiopia that is landlocked. Centers of agricultural production, manufacturing, and consumption all have to be connected to both local, regional, and international markets across the logistics chain, making transport central to any development conversation. The role of transport and mobility in advancing the human capital agendas of education and health cannot be underestimated. In health, low accessibility has a direct effect on the mortality rate due to low prenatal and postnatal care, low immunization, informal medically unattended births, and lack of proper paternal care. In education, low accessibility also affects the reliability of children and teachers' presence in schools -with increased incidences of absenteeism - and leads to opportunistic engagement of children in extracurricular activities nearer to their homes, with the consequent exposures that encourage school dropouts, and early pregnancies and marriages. For farmers, low accessibility constrains the ability to get the best prices for their produce, increases the cost of transport of inputs e.g., seeds, fertilizers, farm implements, and also leads to unnecessary loss and wastage of produce when it cannot be picked or delivered on time.

15. The Ministry of Transport (MoT) is responsible for transport sectoral policy, oversight, leadership, monitoring, and regulation. The Ethiopian Roads Authority (ERA) is responsible for overall network planning and federal roads development. The management of the lower levels of the road network is decentralized. The Office of the Road Fund (ORF) administers funds for road maintenance, which are collected through a fuel levy. Responsibility for road safety lies with the National Road Safety Council (NRSC), which reports to the MoT. In July 2014, GoE established the Ethiopian Toll Roads Enterprise (ETRE), which has the responsibility of managing all toll roads in the country.

16. In terms of responsibilities across the road classification profile, ERA is in charge of the federal link roads and expressways, regional road authorities are in charge of regional roads, while woreda road offices have responsibilities over woreda roads, and urban roads are managed by the relevant urban authorities. There has been a continuous

⁷ Ethiopia's mean annual temperature is 22.61°C and mean annual precipitation is 815.83mm (1901-2016). Average temperatures have increased by 1°C since 1960, and the average number of hot days per year increased by 20% between 1960 and 2003. Climate projections show an increase in temperature between 0.6°C-1.5°C between 2020-2039 and 1.2°C-2.6°C between 2040 and 2059. Climate change projections indicate increased rainfall variability in Ethiopia, with some areas experiencing large increases in precipitation, while other regions experiencing a reduction in rainfall. Precipitation changes may vary from a decrease 14.4mm to an increase in 21.2mm between 2020 and 2039, and a decrease of 16.8mm and an increase in 27.4mm between 2040 and 2059.



overlap in responsibilities and interventions given overlapping mandates, lack of capacity at the lower levels, and a bucket of financing sources that employ different implementation modalities or intervention programs. The proposed PforR will support ongoing Government efforts to streamline responsibilities in the sector and to build institutional capacity not only at the federal level, but also at the regional and woreda levels.

17. The Government of Ethiopia has placed increased emphasis on the improvement of the quality and size of road infrastructure through the formulation of the Road Sector Development Program (RSDP) in 1997, and since then, five phases of RSDP have been implemented over the period of 1997 – 2020. During implementation of the past five phases of RSDP a total of 159,218.4 km of major physical road works excluding routine maintenance was carried out of which 45,794 km was on Federal Roads, 33,618 km was on Regional Roads construction and 79,806.9km on Universal Rural Road Access Program (URRAP) Roads. Overall, physical accomplishment against plan was 65%; this percentage was mainly because of low performance of URRAP roads. Total disbursement was about ETB 414.7 billion (80% of the plan). From this: (i) GoE financed a total of ETB 323.3 billion during implementation of past five phases of RSDP (78% of total disbursement); (ii) Road Fund Office disbursed ETB 24.5 billion (accounting for 5.9% of the total) for routine maintenance of federal, regional, and urban roads and heavy maintenance of some federal road sections and implementation of road safety measures; (iii) Development partners financed ETB 62.6 billion (which account for 15.1% of the total). World Bank financed ETB 20 billion which accounts for 4.8% of the total, being the largest financer of the past five phases of RSDP of all the other development partners (accounting for 35% of the total financed by all development partners).

18. As a result of the implementation of five phases of RSDP in the past 23 years remarkable improvements have been achieved in the road sector. The country's classified road network increased from 26,500 km in 1997/98 to 144,027 Km in 2019/20 including Woreda & Urban roads which in turn led to road density per 1000 sq. km to increase from 24.1km to 130.9 km and density per 1000 population from 0.46 km to 1.2 km at present. The condition of the road network also shows significant improvement. The proportion of road network in good condition increased from 22 percent in 1997 to 72 percent in 2020. Proportion of area less than 5km from all-weather road has increased significantly from 21 percent in 1997 to 66.5 percent in 2020. These changes have brought very positive social and economic impacts: more citizen/districts have got access to road; villages are connected to big markets; farmers have increased their productivity; rural citizen have access to social services and diversified their source of income by engaging in off farm activities.

19. Much of the road network in Ethiopia is exposed to natural hazards like flooding, erosion, and landslides in mountainous areas, which are triggered by precipitation. Climate change is expected to increase the risk and intensity of flooding as well as increase the likelihood of water scarcity in some areas of the country. Land degradation and soil erosion is expected to be exacerbated by recurrent floods and droughts. The variability of rainfall patterns is expected to add to the risks of food security and climate vulnerability of communities. Furthermore, changing precipitation patterns and volumes presents a risk to roads and bridges. Increased river flows contribute to damaging bank erosion and flooding can damage or wash away unpaved roads. Temperature increases also present serious risk. An increase in 2°C can result in the expansion and contraction of bridge materials with additional strain on expansion joints. Immediate challenges for the road networks are the need for continued repairs and maintenance to prevent premature deterioration and enable all season-connectivity and the deployment of climate resilient materials and design standards to deliver all-weather roads.

20. An impact evaluation study conducted by the World Bank estimated that rural roads developed under RSDP increased household welfare by 23 percent between 2012 and 2016. Moreover, households were less likely to fall into, or remain in, poverty when connected by rural roads in drought areas, indicating the role of rural roads in strengthening resilience to drought shocks. The analysis also found that rural road development has affected agricultural and non-agricultural work. More farmers have come to sell their crops once connected to rural roads. More households—particularly women and the youth—have engaged in wage jobs in remote communities. By connecting to markets, rural roads have widened the economic base in otherwise physically and economically isolated communities. In addition, the



study pointed out major challenges facing the existing rural road network including (i) the lack of regular maintenance, (ii) missing bridges (e.g., 1200 bridges for 20 percent of rural network), (iii) careful planning and prioritization of network expansions, and (iv) continued institutional strengthening and capacity building. Despite the significant progress, gaps are still identified in a benchmarking study⁸. The road density per 1000 sq. km in Ethiopia, at 130.9 km, is much lower than Africa's average, at 204 km, and slight lower than Sub Saharan countries average, at 140 km. The proportion of paved road in Ethiopia is only half of Africa's average and Sub Saharan countries average. Road comparative indicators are shown in Table 1 below.

Table 1: Road Indicators in Ethiopia versus regional and international comparators

Indicator	World average	Africa's average	Middle income countries' average	Sub Saharan countries average	Ethiopia's performance	Ethiopia's goal for 2030
Road proximity per 1000 square km	394	204	335	140	130.9	200.4
Road proximity per 1000 people	6.7	-	7.0	3.3	1.31	1.63
Percentage of asphalt roads	60	25	57	25	13.4	18.9
Percentage of roads in good condition	-	75	82	70	73	80

21. **GoE has prepared a 10-year Transport Sector Perspective Plan The Plan, officially launched by MoT in early 2021 which portrays the direction the government intends to follow in the transport sector.** Targets are set for transport infrastructure, transport services, safety, logistics, environmental climate changes, implementation, and capacity building initiatives. This 10-years perspective plan requires ETB 3.04 trillion (US\$69 billion equivalent at current exchange rate) to be implemented.

22. **In the road-subsector, to sustain the results from RSDP and further expand the network coverage, the Plan sets a target of expansion of road network from 144,027 km to 245,942 km.** Federal asphalt roads, Regional rural roads, URRAP roads, and urban roads are included in the 10 years plan with targets of 38,849km, 63,542km, 108,797km, 34,754km respectively. Capacity building of executing agencies (ERA, Regional road institutions and Woreda road offices), developing institutional framework and effective structure for road offices, implementation of strategic leadership and improving information and budget management system are among recommended actions to address gaps identified. Road maintenance is also a focus of the Plan in order to address backlog issues and sustain the efforts of previous RSDP investment. The estimated cost for the road sub-sector is ETB 1.275 trillion (approximately US\$ 28 billion at current exchange rates⁹). Measured by the size and cost, the Plan is more ambitious than the past five phases of RSDP combined. The government is envisaging to finance the Plan through public sector, development partners and private sector. The main objective of this Plan is to enhance the accessibility of target populations served by roads to markets and services, and also strengthening the institutional capabilities of the road sector to deliver and maintain roads in a safe and satisfactory condition.

⁸ International Benchmarking of South Africa's Infrastructure Performance: Infrastructure Development in Sub-Saharan Africa: A Scorecard: AfriCIRF World Road Statistics 2019, latest year of available data for countries a's Infrastructure, A Time for Transformation: The Global Competitiveness Report (2017/18)

⁹ Using rate of 1 US\$ = 46.12 ETB.



23. ERA is also implementing a Road Sector Modernization to deal with the rapidly increasing number of road projects with successive phases of the RSDP. The plan includes introducing reforms in the roles and organizational structure of ERA with the aim of improving efficiency and effectiveness of the Authority as well as enhancing transparency and accountability. ERA is modernizing the core processes like engineering procurement, design management, contract management, asset management, quality assurance and performance monitoring; and key enablers such as engineering innovation and research, right of way management, project handover, human resource development and management, financial management, facility management, and modernization of axle load control. The overall transformation of ERA to the envisioned level of excellence may take from three to five years.

24. Likewise, a 10 years Road Map for Rural Roads Development & Asset Management has been prepared that envisages the following: (i) connecting 5921 kebeles that are not connected with all season roads, (ii) connecting agriculture potential areas; (iii) Reducing the gap in meeting the SDG2030 targets that are set for roads by constructing roads to remote areas, (iv) connecting kebeles, villages and rural areas of agricultural potential to increase the current RAI of 69% (69% of the population currently gets road access within 2km); (v) Constructing 1200 missing bridges that are left out because of the shortage of investment; (vi) Trail bridges constructions; and (vii) ensuring the sustainability of all rural roads built and yet to be built.. A Green and Safe road strategy is planned to be made an integral part of the roadwork.

25. After the latest classification made in 1996/1997 by French Engineering consultant, BCEOM, ERA is now preparing a guideline for functional classification of federal and regional roads based on traffic generating areas ranked and Classified according to their Socio-economic importance. A multi criteria weighting system is used considering demography, agriculture, industry/manufacturing, mining, and services. Accordingly, new road construction projects that will be constructed and administered by ERA will be differentiated among road projects identified by Regional Governments and the Master Plan. Main access, collector and feeder roads will be administrated by Regional Road Authorities, and ERA will retain the responsibility for expressways, trunk and link roads.

26. The proposed PforR to be financed will entirely contribute to the implementation of the Road Connectivity and Access Program (RCAP), which is part of the 10 years Transport Sector Development Plan, and is a new version of the previous Universal Rural Road Access Program (URRAP). URRAP was a successful rural roads program that led to rural road network expansion to 79,806km for approximately US\$1 billion. Almost 1.5 million jobs were created under the program. RCAP will build on the successes of URRAP while also integrating lessons learned like on implementation delivery, and on sustainability. While the proposed program for intervention focuses on rural roads and bridges, which are under the jurisdiction of the regional and woreda road authorities, given capacity constraints, the Ministry of Transport (MoT) and ERA will have critical oversight and technical support roles respectively to ensure that project objectives are achieved in a timely but also prudent manner. Involvement of MoT and ERA will help to support and build capacities at the lower echelons of the regions and woredas, while ensuring proper diligence and safeguards are being implemented. More details on RCAP are presented in later sections.

27. The Government has identified that rural road connectivity is a very critical agenda for agricultural commercialization and in the fight against hunger. Agriculture contributes half of the country's GDP, 84 percent of exports and 80 percent of total employment. However, the geographical conditions of being landlocked, and hilly terrain in some major production areas means that these zones are inaccessible especially during the rainy season. There is a strong push to increase production and commercialize the surplus household production to markets, which would require transporting the farm production to markets, through rural roads. Given the terrain of Ethiopian highlands, there is also a need for a strong emphasis on bridges of various shapes/size/nature, to connect production land to markets. Roads on their own with missing bridges in-between cannot function to deliver fully on the connectivity agenda. Furthermore, this connectivity is equally important to spur off-farm and non-farm employment to create the much-needed jobs in rural areas.



28. **There is a clear gender employment gap in Ethiopia, especially in the transport sector.** According to a World Bank study¹⁰, women are 17 percent less likely than men to participate in the labor force. This disparity widens to 29 percent when considering other factors such as age, education, and household wealth. Women are also less likely than men to be engaged in paid work -more than 50 percent of women engaged in the agricultural sector do not receive any payments. In industries like small-scale manufacturing, 58 percent of female workers are unpaid family workers. In addition, women occupy a much smaller share of technical positions in the formal wage sector, where women account for only 30 percent of the professional workforce. The Gender Diagnostic for Ethiopia finds that a host of factors explain these gender gaps, these include: (a) women being able to spend less time in business activities and limited access to credit (in case of entrepreneurs); and (b) less women have completed tertiary education and lack access to technical training/skills development (in case of wage work). Given that transport sector jobs are paid work and tend to require a higher level of technical skill, female participation in transport and logistics sector is low. While the overall ratio of female to male labor force participation in Ethiopia was 86 percent in 2019, for transport, storage and communication, this share is only 15 percent. Data shows that from the people employed in the construction sector, 20% are women and 80% are men. Gaps in technical skills of and interest by female's in applying for positions at ERA has been identified as a major hurdle in the recruitment of women within the agency and in the transport sector overall. The program design will ensure adequate attention is made to providing opportunities for females to benefit from the program, and benefiting from other initiatives in other Bank programs in the sector.

29. **Ongoing Bank Program in transport sector.** World Bank investment lending projects, including Road Sector Support Project - (P131118) and Expressway Development Support Project - (P148850) have contributed substantially to Ethiopia's road infrastructure development and government's institutional capacity improvement. Through the two lending operations, road asset management, performance-based contracting, design-build for more efficient delivery of infrastructure were introduced. Safer and resilient elements were enhanced. More importantly, ERA's capacity of managing environmental and social safeguards has strengthened significantly. In addition, the Transport Systems Improvement Project (TRANSIP) - (P151819) has provided support in urban transport in Addis Ababa and multiple agencies, e.g., Addis Ababa City Administration Transport Bureau, Federal Transport Authority, are beneficiaries. TRANSIP builds knowledge and capacity new to the country relating to Intelligent Transport Systems (ITS). Bank also provides technical support through trust fund activities including the roads resilience improvement supported by the Korean Green Growth Trust Fund (KGGTF), and the public-private-partnership framework supported by the Public-Private Infrastructure Advisory Facility (PPIAF).

30. **Bank program in preparation in transport sector.** In addition to the current preparation, the Horn of Africa Initiative: Regional Economic Corridor Project - (P174485) is a new regional project to target economic corridor trade and logistics infrastructure, and border crossing process bottlenecks to improve trade efficiency and regional integration. This project was targeted for a Board presentation in late 2021.

Relationship to CAS/CPF

31. **The proposed project is strongly aligned with the World Bank Group Country Partnership Framework Fy18-22¹¹.** In particular, the proposed project contributes to the achievement of outcomes under two of the three focus areas: Focus area 1: Boost productivity and private sector development for structural transformation (objectives of improved connectivity and enhanced regional growth and secondary cities); and Focus area 3: Supporting institutional accountability

¹⁰ World Bank. 2019. Ethiopia Gender Diagnostic Report: Priorities for Promoting Equity. World Bank, Washington, DC. © World Bank.
<https://openknowledge.worldbank.org/handle/10986/31420> License: CC BY 3.0 IGO."

¹¹ World Bank Group (2017), Country Partnership Framework for the period FY18-FY22 dated May 22, 2017.



and confronting corruption (objectives of increased capacity and improved governance in service delivery). Under focus area 1, the CPF notes that improved spatial connectivity is necessary for equitable growth by connecting production centers to markets and connecting secondary cities. It commits WBG to support improvements in transport infrastructure and road connectivity to reduce travel times and enhance connectivity between markets and secondary cities.

32. The project is aligned with the World Bank's Next Generation Africa Climate Business Plan¹², the Ethiopian Program of Adaptation to Climate Change (EPACC), Ethiopia's Nationally Determined Contribution to the UNFCCC (NDC)¹³, and Ethiopia's Climate Resilient Green Economy Strategy (CRGE)¹⁴. The EPACC indicates that transport is one of the most vulnerable sectors to climate shocks. The NDC identifies as a key measure for local resiliency the development and implementation of climate change compatible building/construction codes for buildings, roads, dry ports, railways, and other infrastructure to be safe for the population and to minimize economic damage associated with increasing extremes in flooding. CRGE addresses both climate change adaptation and identifies leapfrogging to modern and energy-efficient technologies in transport, buildings, and industry as one of its pillars. Addressing climate change in road transport is critical since approximately 75 percent of transport related emissions come from road transport. The project will build climate and disaster resilience elements into the road design, construction, maintenance, and institutional capacity to achieve the above goals.

Rationale for Bank Engagement and Choice of Financing Instrument

33. The World Bank has been a long term partner to the Government of Ethiopia in the road sector and is well positioned to support the Government's continuous effort to address key challenges in prioritization, expansion of the road network, and asset management. The World Bank was the single largest financier of RSDP among all development partners, accounting for one third of financing from all development partners. In addition to financial support, the World Bank is continuing to assist ERA to improve its project delivery and enhance its technical capacity through introducing road asset management, performance-based contracting, design-build for more efficient delivery of infrastructure. Significant support on road safety reforms and implementation of a safe and resilient systems strategy has also been impactful. Furthermore, as lower class roads are not suitable candidates for private sector investment, the access and connectivity benefits of the proposed project would not be realized without development partner involvement. The proposed project gives the opportunity to extend the technical assistance being given to ERA to the regional and woreda road authorities, and thus ensure that the rural road network is properly and adequately delivered, managed, and sustained. The World Bank's engagement adds value in several ways, including (a) bringing global experience on roads' investment planning and asset management, including road inventory, condition, mapping, and innovative economic prioritization tools, as well as introduction of innovative procurement and contract management practices; (b) providing best practices in climate-resilient transport and sustainable maintenance, (c) synchronizing roads investment with agriculture productivity investment, (d) introducing innovations in monitoring, evaluation and safeguards management using systems, technological tools like apps, web platforms, and (e) supporting the government's efforts to create jobs, particularly during the covid recovery phase, through microenterprises for routine maintenance.

34. A Program for Results (PforR) financing instrument is proposed to support the Government's 10 year Road Development plan in general, and the Road Connectivity and Access Program (RCAP) in particular, focusing on

¹² World Bank 2020: Next Generation Africa Climate Business Plan – Ramping Up Development Centered Climate Action. World Bank, Washington DC. (URL: [Reports \(worldbank.org\)](#))

¹³ Ethiopia's Nationally Determined Contribution to the UNFCCC, 2016. (URL: [INDC-Ethiopia-100615 \(unfccc.int\)](#))

¹⁴ Ethiopia's Climate-Resilient Green Economy; Green Economy Strategy; Federal Democratic Republic of Ethiopia, 2011. (URL: <https://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf>)



achievement of results while relying on the institutional capacity and systems that have been developed over the past years of engagement. Through long term partnership, the WB has supported the road sector in Ethiopia over the past three decades, with tested and strengthened technical, fiduciary, and safeguards capacity for the delivery of the road assets (road asset management, road safety, road construction, maintenance). Previous operations have been based on IPF type instruments with focus and oversight on specific transactions, given the initial nascent capacity and the need to ensure compliance with fiduciary and safeguards requirements. However, the capacity of ERA has improved drastically and its ability to deliver its road sector program following the existing systems is at a level that justifies a transition towards a result-based engagement. Since the roads and bridges proposed for intervention are at the lower functional classification levels under the regional road authorities and woredas, the program envisages the active participation of MoT and ERA as oversight and technical support entities to ensure program results are achieved in a satisfactory manner. At the same time, the Government has come up with a comprehensive 10-year Road Development Plan that is well-structured, with clear targets, and aligned with the three Country Partnership Framework (CPF)¹⁵ focus areas of: (i) promoting structural and economic transformation through increased productivity, (ii) building resilience and inclusiveness, and (iii) supporting institutional accountability and confronting corruption. As such, a transition from IPF to PforR is timely.

35. **The Program for Results (PforR) financing is suitable for this operation given that:** (i) the operation will support a government program in infrastructure rather than specific investment projects; (ii) the Bank can add value to improve the overall efficiency, effectiveness and sustainability of the program; (iii) the instrument allows flexibility for advancing delivery while ensuring compliances with country systems for fiduciary and safeguards requirements with the project disbursement linked indicators and program action plans helping to address any gaps; (iv) the instrument builds Government capacity to deliver and sustain its infrastructure at all levels (from federal to regional to woreda levels) without the need for oversight at the transaction level and helps to improve corporate governance, autonomy, and accountability; (v) the instrument is ideal for mitigating against project implementation delays as it spreads performance risks across a whole program rather than being focused on specific projects, and disburses following the achievements of results within the boundaries of the program, and (vi) for a rural road program spread across the country, an IPF instrument is not suitable given the high transaction costs for managing many small dispersed rural road sub-projects.

C. Program Development Objective(s) (PDO) and PDO Level Results Indicators

Program Development Objective(s)

The PDO is to enhance the accessibility of target populations served by selected rural roads to markets, and to other economic and social services.

PDO Level Results Indicators

36. **The PDO indicators may include:**

- Increase in the share of the rural population that has access to all-weather roads - Increase in Rural Accessibility Index (RAI) – (Percentage)
- Target increase in rural population served by reliable all-weather roads (number)

¹⁵ Ethiopia Country Partnership Framework FY18-FY22.



- Increase in the share of the woreda road network in good and fair condition (Percentage)
- Increase in share of target population expressing satisfaction with the condition of the road network, disaggregated by sex (Percentage)

D. Program Description

PforR Program Boundary

37. **The proposed PforR will entirely contribute to the implementation of the Road Connectivity and Access Program (RCAP), which is part of the 10 years Transport Sector Development Plan, and is a new version of the previous Universal Rural Road Access Program (URRAP).** URRAP was one of the main road sector programs with important goals that were consecutively implemented in Growth and Transformation Plans, GTP I and GTP II. With this road development program, it was possible to significantly improve the road sector performance both in terms of coverage and quality. The program was designed with the intent to link every rural community to a main road that fulfils the required standard and its implementation led to the construction of more than 50 thousand km of all-weather roads in seven regions namely Tigray, Gambella, Amhara, Southern Region, Oromia, Benishagul and Dire Dawa City Administration. Moreover, the program created opportunities for technology transfer, jobs creation and impetus in other sectors, especially in agriculture, manufacturing, and business formation.

38. **However, the goal of linking every rural community to a main road as set in the first Growth and Transformation Plans is still not fully realised.** Road accessibility plays an important role in rural communities insofar as by improving accessibility to other social services, it can change the lives of those rural communities. Hence Government has seen it fit to launch this successor program of RCAP.

39. **RCAP will not only help rural community connectivity and accessibility to basic social services (education and health), , but also play a critical role in the economic recovery and post-Covid response..** The benefits to the agriculture, education, and health sectors have already been articulated. In addition to these, the program will also help contribute to the economic recovery, and post Covid response by providing employment opportunities of not only men, as is traditionally done, but also youth and women, in a challenging Covid and post-Covid employment environment. Work opportunities under the program will exist for both the construction and maintenance phases, ensuring the sustainability of the assets while providing livelihood and sustenance for vulnerable rural populations. Last but not least, the program will create conditions for cost savings, streamline investment and maintenance, create integrated procedures, and foster the coordinated organization and delivery of safe and climate-resilient rural roads. This will in turn reduce wastage of scarce Government resources by coordinating and bringing under a single national procedure and standard small road development programs that were run in the past by various ministry departments. Review of past program implementation and national vision for the coming ten years as well as domestic and foreign experiences with regard to accessibility of rural and pastoral communities were used as input for designing the RCAP.

40. **The PforR will finance the entire Phase 1 of RCAP between 2021 and 2025¹⁶.** The proposed PforR will contribute to all six transport perspective goals with special focus on goals 1, 3, 5, and 6 and will only address the road subsector. It aims at supporting the Government's Plan toward promoting accessibility (Goal 1) in sustainable, safe (Goal 3), and climate

¹⁶ Given the late start, the possibility exists for phase 1 to run to 2026/2027, and program implementation is to be adjusted accordingly.



resilient (Goal 5) manner, and strengthening government's capacity along these areas (Goal 6). The results are mainly governed by the targets under Goal 1.

41. The program main objective is to interconnect rural communities as well as isolated areas in order to improve rural living standards by increasing social and economic services accessibility. In order to achieve this objective, the following goals are included: (i) link rural community centers to nearest main roads; (ii) interconnect villages and areas with economic and social potential; (iii) make accessible rural areas that are isolated due to geographical reasons, and (iv) solve crossing problems in lowland areas. RCAP will enhance rural connectivity and accessibility in Ethiopia by: connecting unconnected kebeles, high agricultural potential areas, and relatively densely populated village centers with all-weather access roads; providing pedestrian suspension crossings (trail bridges) for areas with lack of access because of topography; by providing special structures (pipe culverts, box culverts, bridges, etc.) for low land and pastoralist communities with crossing problems, and by strengthening policy, institutional and strategic framework that help enhancing the rural roads provision, expansion and road maintenance management. A Program for Results (PforR) financing instrument is proposed for this roads program with the benefits that this instrument provides by focusing on results and diversifying the concentration risk by focusing on the success of a whole program rather than relying on specific project transactions that might fail

42. In addition to the above overarching objectives, the program aims at contributing to other cross-cutting objectives including: improving road safety, building resilience to natural disasters, mainstreaming gender, extending the service life of the road assets through best practice asset management practices and sustained maintenance, and deepening institutional reforms in the rural roads sector. The program design has benefited from lessons learned in the implementation of previous rural road programs in the country, including the need for clear delineation of responsibilities, involvement of key stakeholders in the design process, and ensuring adequate capacity for implementation is in place. The program has also benefited from foreign and local experiences in the design and implementation of rural road programs by the World Bank and other development partners in other parts of the world including in Africa, Latin America, Europe, and Asia.

43. The Scope of the Program encompasses the following elements: (i) Construction and maintenance of all-weather roads to connect rural kebele centers to the nearest main roads; (ii) Provision of pedestrian suspension crossings (trail bridges) for areas with lack of access because of topography; (iii) Construction and maintenance of community roads to connect agriculture potential areas, and relatively densely populated villages to the kebele centers; and (iv) Construction of special structures (pipe culverts, box culverts, bridges, etc.) for lowland and pastoralist communities with crossing problems.

44. The total estimated cost of the first phase RCAP program is US\$ 774.3 M, of which the Bank proposed to finance US\$300 million with the balance coming from Ministry of Finance Treasury allocations, regional and woreda contributions, and possibly other development partners (yet to be identified). The PforR operations will support the Government of Ethiopia over a period of four years to improve rural road network connectivity, access, safety, and quality of the road network. It will provide vital improvements in the rural road network in all over the country, including better access for farm-based communities, rural villages, pastoralist communities to all weather roads that reach market centers and different social and economic centers. This PforR program is planned to cover (39%) of the total finance required for RCAP which will be managed in line with national regulations, under the Government treasury system and maintained or managed by the financial bureaus at Regional and Woreda levels, with oversight and technical support by MoT and ERA.

E. Initial Environmental and Social Screening



45. This program is expected to have a range of socioeconomic benefits including increased access to markets for local produce and products, employment of local workers on the program activities, better access to health care and other social services, etc. However, the proposed program investments such as construction of rural roads to enhance rural accessibility; upgrading of the existing roads for reliability and resilience; and periodic maintenance roads can have significant environment, social, health and safety risks if appropriate arrangement for identification management of such risks is not put in place. The environment, social, health, and safety impacts of roads result from construction, maintenance, and traffic use. The most significant construction-related impacts include removal of houses, plants, and other assets, loss of vegetative cover, modification of natural drainage patterns, landslides, soil erosion, stream, and lake sedimentation, destruction of cultural sites and interference with movements of wildlife and livestock. Many of these impacts can arise not only at the construction site but also at quarries and materials storage areas serving the project.

46. Disruption of terrestrial and aquatic habitats can occur both during construction of a road and during maintenance of the right-of-way. Road construction activities may affect wildlife habitats, depending on the characteristics of existing vegetation, topographic features, and waterways. Examples of habitat alteration from these activities include fragmentation of forested habitat, loss of nesting sites of rare, threatened or endangered species and or high biodiversity/sensitive habitat, disruption of watercourses and creation of barriers to wildlife movement.

47. Adverse environmental impacts can also occur in both construction and maintenance activities because of air from fugitive dust and other emissions (e.g., from vehicle traffic, land clearing and movement, and materials stockpiles); noise from construction equipment and blasting; and soil pollution by hazardous materials and oil spills associated with heavy equipment operation and fueling activities. Solid waste may be generated during construction and maintenance of roads and associated structures. Significant quantities of rock and soil materials may be generated from earth moving during construction activities. Solid waste generation during operation and maintenance activities may include road resurfacing waste (e.g., removal of the old road surface material); road litter, illegally dumped waste, or general solid waste from rest areas; animal carcasses; and vegetation waste from right-of-way maintenance. Water pollution could result from spills or accumulated contaminants on road surfaces.

48. The construction and improvement of rural roads and bridges is expected to benefit different stakeholders including the local people by enhancing accessibility and creating employment opportunity among others. The potential adverse social impact include involuntary resettlement of affected people from land required for the construction. Rehabilitation of roads following the existing RoW and bridges improvement is not expected to cause displacement. To curb the risk of displacement, subprojects that will cause significant displacement (beyond 200 people) will be excluded from the program financing. The project is expected to use local labor for most of the activities, in case of non-local labor, mitigation measure will be proposed in line with the risk.

49. There are occupational and community health and safety concerns in construction and operation of road projects. Road construction and maintenance personnel can be exposed to a variety of physical hazards, from operating machinery and moving vehicles but also working at elevation on bridges. Other physical hazards (e.g., exposure to weather elements, noise, work in confined spaces, trenching, falls from machinery or structures, and risk of falling objects). Community health and safety issues during the construction of roads include, among others, dust, noise, and vibration from construction vehicle transit, and communicable disease associated with the influx of temporary construction labor. Pedestrians and bicyclists could be risk of serious injury from collisions with moving vehicles. Crash risks associated with vehicular traffic and transport that may result in injuries or loss of life. No adverse environmental and social risk is anticipated because of Result 1 as it focuses on capacity building and reforms activities. The potential downstream impact of this component will be assessed during preparation of ESSA.



50. These EHS risks need to be properly identified and managed by establishing and maintaining an environmental and social risk management system. The Program implementing entity (ERA) has gained considerable experience on management of environmental and social risks from the World Bank financed projects including Road Sector Support Project (P131118), Expressway Development Support Project (P148850) and the Transport Systems Improvement Project (TRANSIP) (P151819). High risk activities such as major transport infrastructure including new highways, expressways, urban metro-systems, railways, and ports will be excluded from the Program financing. Hence, the overall environmental and social risks of the activities to be financed by the Program is expected to be Substantial.

51. Prior to the program appraisal, the Bank will analyze the applicable Ethiopian Environmental and Social Systems, considering the system both as it is defined in laws and regulations, and as it is implemented in practice. The purpose of Environmental and Social System Assessment (ESSA) is to determine the Client's systems' capacity to manage program risks. Based on the ESSA, the Bank and the Government of Ethiopia will agree on measures and actions to manage any significant gaps in the client's capacity to implement E&S management systems at a level commensurate with the identified risks to the Program, and consistent with the Bank's core principles. Recommendations and actions for enhancement of the client E&S risk management system (based on the findings of the ESSA) will be incorporated in the PAD, PAP, Program Legal Agreement, or POM. It is also recommended that a disbursement linked indicator that could enhance the client's E&S management systems, capacity, and/or performance is included in the program design so that potential risks could be properly identified and managed throughout the program cycle.

52. The client will prepare an environmental and social guideline (ESMG) and Resettlement Guideline that shall be used as a basis for identification and management of environmental and social risks of the program activities. The ESMG shall cover among others procedures for: i) screening of program activities based on E&S risks; ii) preparation of E&S risk management tools such as ESAs/ESMPs proportionate to the potential risks; iii) review and approval of E&S risk management tools by the regulatory agency; iv) implementation of E&S risk management tools; iv) ES risk management implementation arrangement that needs to be put in place; and iv) compliance monitoring and reporting ; and iv) annual independent E&S auditing of the program activities.

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