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REGIONAL

BORDER INTEGRATION PROJECT – AXIS ROAD 4, BELLAVISTA-ZUMBA-LA BALSA ROAD, ZAMORA-CHINCHIPE PROVINCE

(RG-L1132)

LOAN PROPOSAL

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ABBREVIATIONS

BCE	Central Bank of Ecuador
BCRP	Central Reserve Bank of Peru
CEBAF	Centro Binacional de Atención en la Frontera [Binational Border Service Center]
CGE	Office of the Comptroller General
EIRR	Economic internal rate of return
ESIA	Environmental and Social Impact Assessment
e-SIGEF	Sistema de Administración Financiera [Financial management system]
ESMP	Environmental and Social Management Plan
ESMR	Environmental and Social Management Report
GDP	Gross domestic product
ICAS	Institutional Capacity Assessment System
ICB	International competitive bidding
IICQ	International individual consultant selection based on qualifications
INAMHI	National Institute of Meteorology and Hydrology
INEC	National Statistics and Census Institute
IRI	International Roughness Index
MAG	Ministry of Agriculture and Livestock
MPCEIP	Ministry of Production, Foreign Trade, Investment, and Fisheries
MEF	Ministry of Economy and Finance
MTOP	Ministry of Transportation and Public Works
NCB	National competitive bidding
NICQ	National individual consultant selection based on qualifications
NRS	National road system
PBDRF	Plan Binacional de Desarrollo de la Región Fronteriza [Binational Development Plan for the Border Region]
PCR	Project completion report
PMT	Project management team
SEPA	Sistema de Ejecución de Planes de Adquisiciones [Procurement Plans Management System]
SERCOP	Servicio de Contratación Pública [National Public Procurement Service]
SNGRE	Servicio Nacional de Gestión de Riesgos y Emergencias [National Risk and Emergency Management Service]
WHO	World Health Organization

PROJECT SUMMARY

REGIONAL
BORDER INTEGRATION PROJECT – AXIS ROAD 4, BELLAVISTA-ZUMBA-LA BALSA ROAD, ZAMORA-CHINCHIPE PROVINCE
(RG-L1132)

Financial Terms and Conditions				
Borrower:			**Flexible Financing Facility[a]**	
Republic of Ecuador			**Amortization period:**	25 years
Executing agency:			**Disbursement period:**	5 years
Ministry of Transportation and Public Works (MTOP)			**Grace period:**	6 years[b]
Source	**Amount (US$)**	**%**	**Interest rate:**	LIBOR-based
IDB (Ordinary Capital)	128,200,000	89	**Credit fee:**	[c]
Local	16,584,000	11	**Inspection and supervision fee:**	[c]
Total	144,784,000	100	**Weighted average life:**	15.22 years
			Approval currency:	U.S. dollars

Project at a Glance
Project objective: The general objective is to help improve the economic integration of Ecuador's southern and southeastern regions, in the border provinces of Loja and Zamora-Chinchipe. The specific objective is to improve border road quality, coverage, and connectivity by rehabilitating the Bellavista-Zumba-La Balsa road.
Special contractual conditions precedent to the first disbursement of the loan: (i) the program Operating Regulations (optional link 10) will be approved and in force, in accordance with the terms and conditions previously agreed upon with the Bank; and (ii) the executing agency will designate a project management team (PMT), which will include an environmental specialist and a social specialist, based on the profiles and activities previously agreed upon with the Bank (paragraph 3.3). **Special contractual conditions for execution:** Through the executing agency, the borrower agrees to: (i) contract and begin project oversight at least one month prior to the order to initiate the works contract; (ii) no later than one month after the works contract has been awarded, designate a professional and technical team that will carry out the various works supervision activities, including socioenvironmental supervision; and (iii) present evidence that the executing agency has signed the interagency agreements necessary for the implementation of the activities under Component 2 (paragraph 3.4). See also the special environmental and social contractual conditions set forth in Annex B of the Environmental and Social Management Report (ESMR) (required link 3).
Exceptions to Bank policies: None

Strategic Alignment						
Challenges:[d]	SI	☐	PI	☑	EI	☑
Crosscutting themes:[e]	GD	☑	CC	☑	IC	☐

[a] Under the terms of the Flexible Financing Facility (document FN-655-1), the borrower has the option of requesting changes to the amortization schedule, as well as currency, interest rate, and commodity conversions. The Bank will take operational and risk management considerations into account when reviewing such requests.

[b] Under the flexible repayment options of the Flexible Financing Facility, changes to the grace period are permitted provided that they do not entail any extension of the original weighted average life of the loan or the last payment date as documented in the loan contract

[c] The credit fee and the inspection and supervision fee will be established periodically by the Board of Executive Directors as part of its review of the Bank's lending charges, in accordance with applicable policies.

[d] SI (Social Inclusion and Equality); PI (Productivity and Innovation); and EI (Economic Integration).

[e] GD (Gender Equality and Diversity); CC (Climate Change and Environmental Sustainability); and IC (Institutional Capacity and Rule of Law).

I. DESCRIPTION AND RESULTS MONITORING

A. Background, problem addressed, and rationale

1.1 **Regional and socioeconomic context.** Countries in the Andean region have experienced accelerated growth over the past decade, with gross domestic product (GDP) increasing at a higher average rate compared to the rest of Latin America and the Caribbean. During the 2008-2018 period, the economies of Peru and Ecuador sustained an annual average growth rate higher than that of Latin America, which hovered around 1.3%. According to official figures, over the past 10 years Ecuador has grown by 2.04% per year on average, while Peru has grown by nearly 4% per year.[1] Regarding Ecuador's industrial production, the activities that have historically accounted for a significant portion of GDP include manufacturing (11%), oil and mining (11%), trade (11%), and agriculture (8%).[2] All of these activities are highly dependent on the quality, coverage, serviceability, and connectivity of the road transportation network.

1.2 During the 2007-2018 period, Ecuador's national poverty rate decreased steadily. In 2018, the national poverty rate stood at 23.2%, and extreme poverty was 8.4%. In urban areas, the poverty rate was 15.3% and the extreme poverty rate was 4.1%, whereas in rural areas the poverty rate was 40% and the extreme poverty rate was 17.7%.[3] In socioeconomic terms, Ecuador's southern and southeastern areas are more isolated and have more poverty compared to national levels,[4] as well as less access to basic services like healthcare and education.

1.3 In terms of foreign trade, Ecuador has experienced rapid growth over the past decade, with total exports and imports accounting for 36.2% of GDP in 2018.[5] In 2017, the main destination for Ecuadorian exports was the United States, with 31.5% of total exports, followed by the European Union with 16.5%, and member countries of the Andean Community totaling 10.9%.[6] Bilateral trade between Ecuador and Peru amounted to US$1.2 billion in 2018, with Ecuadorian exports to Peru accounting for US$356 million, or 1.6%, of the total[7] (optional link 6).

1.4 In southern Ecuador, the provinces of Loja and Zamora-Chinchipe have 634,130 inhabitants and account for 1.45% of Ecuador's GDP. In northern Peru, the departments of Cajamarca, Amazonas, and Loreto have 392,620 inhabitants and account for 4.5% of Peru's GDP.[8] In southern Ecuador and northern Peru, the main economic activities are agriculture, livestock, forestry, and fisheries, which

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1 Source: Central Bank of Ecuador (BCE) and Central Reserve Bank of Peru (BCRP).

2 Source: BCE.

3 Source: National Statistics and Census Institute (INEC).

4 According to the Population and Housing Census of 2010, in the provinces of Loja and Zamora, 61.8% and 73.8% of the population was living in poverty, respectively. In isolated population centers, like Vilcabamba (67.2%), Yangana (78.2%), Bellavista (99%), and Progreso (60.5%), the proportion of the population living in poverty was over 60% higher than recorded national rates. INEC.

5 Source: Ministry of Production, Foreign Trade, Investment, and Fisheries (MPCEIP).

6 These three markets absorbed 58.4% of exports in 2017. Within the Andean Community (comprised of Colombia, Bolivia, Peru, and Ecuador), Peru (61%) captured the highest percentage of Ecuador's exports in 2017. Source: Foreign Trade Report, MPCEIP.

7 Source: MIT Observatory of Economic Complexity.

8 Source: Population and Housing Census of 2010.

together account for over 50% of total production in those areas, followed by ecotourism, trade, and services.[9] Both of the project's areas of intervention offer significant economic potential in the long term, if regional transportation and logistics connectivity networks can be improved and strengthened. These networks are essential for boosting economic synergy between Ecuador and Peru, and with other Andean and Southern Cone countries (optional link 1).

1.5 **Ecuador-Peru regional integration.** Ecuador and Peru are developing a regional integration strategy in order to improve the quality, coverage, and connectivity of the road network, as well as binational cooperation and living standards for border populations. This is established in the Brasilia Presidential Act of 26 October 1998 (the Peace Agreement), which defines the Comprehensive Peru-Ecuador Agreement on Border Integration, Development, and Neighborly Relations, based on the Binational Development Plan for the Border Region (PBDRF) between the two countries. The PBDRF includes programs in various areas, one of which is the Binational Program for Social and Productive Infrastructure Projects. This program includes five road interconnectivity projects known as axis roads,[10] totaling 2,176 kilometers, and aims to address the issue of limited connectivity in order to facilitate economic integration and trade.

1.6 At recent presidential meetings and in their plans of action,[11] Ecuador and Peru have reaffirmed the need to complete construction of these axis roads, pursuant to the terms of the Peace Agreement. These are essential for improving crossborder transportation of people, vehicles, and goods. They also strengthen internal communication and territorial integration, by prioritizing access to provincial capitals, especially through connections to remote areas and/or areas that have potential for production. Ecuador has fulfilled its commitment, except with regard to 52 kilometers of the Bellavista-Zumba-La Balsa section of axis road 4 (total length of 690 km). On the Peruvian side, the contiguous section of axis road 4 from Saramiriza to La Balsa (486 km) is being completed with a paved road up to the border integration bridge. As for the border post located on axis road 4, construction of a new Binational Border Service Center (CEBAF) is planned, which already has feasibility designs. The CEBAF will have a single head office based in Peru,[12] and control-related activities will be carried out jointly by Peruvian and Ecuadorian authorities.

1.7 **Strategic role of road integration corridors.** As an integration corridor, axis road 4 (Figure 1) connects Ecuador with the cities in northern Peru,[13] thereby enabling Ecuador to access the Amazon River; it also connects to the northern Amazonas axis, reaching the Peruvian coastal area of Piura, and the port of Paita,

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9 Socioeconomic study and INEC.

10 Axis road 1 Piura/Guayaquil (Guayaquil-Machala-Huaquillas-Aguas Verdes-Tumbes-Piura), 538 km; axis road 2 Sullana/Arenillas (Arenillas-Pindal-Zapotillo-Lalamor-Alamor-Lancones-Sullana), 244 km; axis road 3 Sullana/Loja (Loja-Catacocha-Macará-La Tina-Sullana), 319 km; axis road 4 Saramiriza/Loja (Loja-Vilcabamba-Zumba-La Balsa-Chinchipe-Namballe-Jaén-Bagua-Santa María de Nieva-Saramiriza), 690 km; axis road 5 Saramiriza/Méndez (Méndez-Yaupi-Borja-Saramiriza), 385 km.

11 Declarations and plans of action from presidential meetings, Trujillo (2017) and Quito (2018).

12 Construction of the CEBAF is not part of this operation, as it is already included in the PBDRF agreements as a Peruvian commitment. Both Ecuador and Peru already have extensive experience in coordinating, implementing, and jointly operating the CEBAFs on other axis road interconnection points under the PBDRF.

13 Specifically, Namballe-Jaén-Bagua-Santa María de Nieva-Saramiriza.

which is important to the region's economic activity (paragraph 1.3). Axis road 4 goes through towns in the provinces of Loja and Zamora-Chinchipe. In these areas (Figure 2), relevant economic activities are those related to services and trade with southeastern Ecuador and Peru. Additionally, axis road 4 is of great strategic importance since it will be a conduit for part of the trade from Ecuador towards the Atlantic Ocean, with opportunities for integration with Brazil and for inclusion of the Amazon region in international trade (optional link 1).

Figure 1. Axis road 4

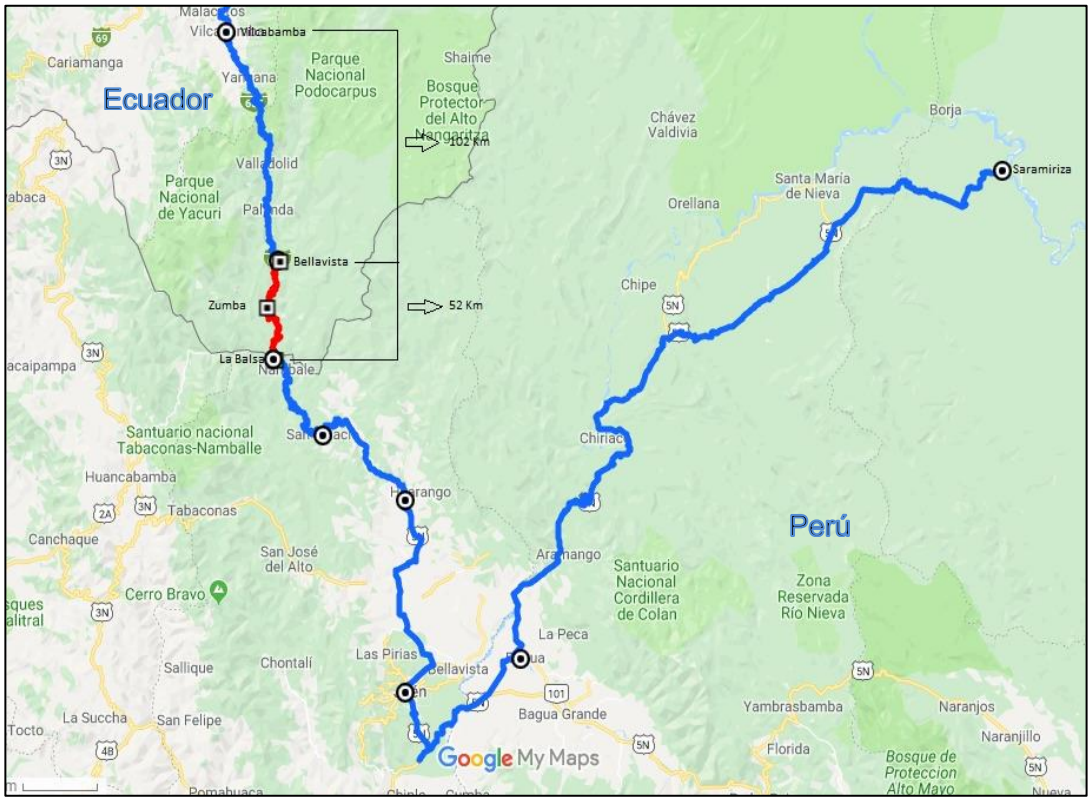

Figure 2. Bellavista-Zumba-La Balsa section

Source: Based on technical project documents (IDB-Walsh).

1.8 **Binational trade and regional chains.** Ecuador's provinces of Loja and Zamora-Chinchipe have high potential for crossborder trade of agricultural and livestock products, as well as services, with the neighboring country of Peru. For both countries, the regional value chain for coffee and cocoa is a source of regional income and employment. Within the coffee value chain, a large part of what is produced in Peru comes from department of San Ignacio.[14] However, since the department does not have processing plants for roasting and grinding, it is only able to market the raw material, which is then processed in Ecuador. It should be noted that transportation to Ecuador is costly due to the lack of connectivity. San Ignacio imports processed products from Ecuador, such as canned foods, preserves, snack foods, and cereals. Another important activity for Ecuador and Peru is tourism, mainly with Peru receiving Ecuadorian visitors and foreigners coming from Ecuador, with numbers increasing steadily since 2016.[15]

1.9 **Road infrastructure.** Ecuador has a national road system (NRS) with approximately 9,800 km of road, of which 94% are paved and 71% are in good condition.[16] The country has made great progress in international comparative indicators[17] for infrastructure quality, which reflects the Government of Ecuador's

[14] In San Ignacio, which is located 46 km from the border with Ecuador, annual coffee production is approximately one million quintals per year, which accounts for 27% of Peru's total national production.

[15] Tourism potential for both countries is centered on attractions like nature preserves, natural resources, and archaeological sites.

[16] Country infrastructure notes: Andean Region (Andrian, 2019) and Reforms and Development in Contemporary Ecuador (Diaz Cassou, 2018). State of the National Road Network 2018 (MTOP-Office of Road Maintenance). Good Condition: International Roughness Index (IRI)<4.

[17] Between 2008-2009 and 2017-2018, Ecuador moved up 71 spots in the road quality indicator published in the Global Competitiveness Report (GCR), from 100th to 29th place, out of 138 countries.

investment efforts[18] over the past decade to expand and improve the NRS. This investment effort did not include the rehabilitation of road segments located in border areas. In fact, although government policy requires that all sections of road be paved with asphalt or concrete, based on class and importance, the only sections of the NRS that do not have this type of surfacing (approximately 6%) are located in the border areas with Colombia and Peru.

1.10 **Connectivity of border areas in southern Ecuador.** Road connectivity is limited and of poor quality at the provincial level in Ecuador, in addition to the fact that the southern part of the country has historically been isolated. In the province of Zamora-Chinchipe, the road network's serviceability is suboptimal (93.1% of the NRS in the province is in fair or poor condition),[19] which affects the standard of service of freight and passenger transportation. The provinces of Loja and Zamora-Chinchipe are far from Ecuador's main centers of economic development and production: Loja is over 681 km from Quito and 403 km from Guayaquil, and Zamora is over 697 km de Quito and 458 km from Guayaquil. Additionally, road connectivity within Zamora-Chinchipe province is poor (road density is 0.026 km/km^2 compared to the average of 0.05 km/km^2 for Ecuador's provinces), which results in low accessibility for those rural communities to centers of production and markets in cities, as well as to healthcare services, employment, education, and leisure.

1.11 **Risk of natural disasters.** Within the region, Ecuador is one of the countries that is most exposed to the many types of natural threats, including earthquakes, tsunamis, floods, landslides, droughts, and volcanic eruptions. Between 1970 and 2016, over 10,000 disasters were recorded, 51% of which were landslides caused by rain (DesInventar, 2019). Specifically, the two provinces of Loja and Zamora-Chinchipe, which constitute the project's area of intervention, are highly susceptible to landslides, with over 1,600 landslides recorded between 2000 and 2018 (23% of the landslides in the entire country).

1.12 **Road management.** At the national level, the Ministry of Transportation and Public Works (MTOP) is responsible for road management and transportation infrastructure needs. The MTOP has been the executing agency for all NRS road works financed with resources from the national general budget, other national funds, and international organizations. For the purposes of local governance, the MTOP has provincial offices that are grouped together into area undersecretariats. Axis road 4 is under the local jurisdiction of the provincial offices of Loja and Zamora-Chinchipe, which fall under southern area undersecretariat 7. The local governments are in charge of managing and supervising projects in their territories, once these projects have been contracted at the central government level.

1.13 **Identification of the problem and its main causes.** The poor condition of the Bellavista-Zumba-La Balsa road[20] has a negative effect on freight and passenger transportation activities, causing low traffic levels, high travel times, and high vehicle

[18] It is estimated that total investment in road infrastructure between 2007 and 2016 was nearly US$8.825 billion. This amounts to an average of 1.3% of GDP during this period, reaching nearly 2% in some years.

[19] Estado Red Vial Estatal 2018 (MTOP-Office of Road Maintenance).

[20] The estimated IRI is >20 m/km, with driving speeds of up to 25 km/h.

operation costs.[21] The road's poor serviceability discourages potential users from traveling, as their vehicles and transported goods are exposed to potential harm, and users are exposed to personal safety risks, all of which negatively affects binational and regional trade (paragraphs 1.6 and 1.8). Additionally, the road is highly susceptible to landslides, due to the combined effects of mountainous terrain, slopes, and heavy precipitation. According to statistics from the MTOP, a total of 318 landslide events have occurred on this road over the past 40 months (averaging eight events per month). These events affect the road's operability, reduce users' trust in transportation services, and greatly increase travel times. The high volume of soil, rock, and vegetation that moves during each event (350 m^3 on average) leads to high maintenance costs for this road, amounting to over US$13,600 per kilometer per year.[22] Since these landslides are mainly caused by heavy precipitation, they are likely to become more frequent due to the additional risk of global climate change (paragraph 1.11).[23]

1.14 Furthermore, the road's conditions are a major threat to road safety, as drivers encounter adverse conditions and endanger themselves. Based on information provided by the MTOP, many road accidents occur, with around two fatal accidents per year on average. Aside from the poor condition of the road, the main causes of these accidents are: (i) unclear markings on the existing road and small radii of curvature; (ii) poor visibility; (iii) narrow lanes; (iv) gradients that are steeper than permitted; (v) the high number of landslides occurring on the road; and (vi) a lack of signage and lighting, etc. At the national level, Ecuador has a comparatively high rate of road accidents in the region, and safety is a recurring concern for national authorities. The latest mortality rate reported to the World Health Organization (WHO) for Ecuador was 21.3 deaths per 100,000 inhabitants in 2016,[24] and for Latin America and the Caribbean it was 15.6 deaths per 100,000 inhabitants in 2018.[25]

1.15 **Rationale and proposed interventions.** This intervention consists of completing axis road 4 by improving the only unpaved section of the NRS in the provinces of Loja and Zamora, which is the Bellavista-Zumba-La Balsa road (52 km) (paragraphs 1.4 and 1.6). The current condition of this section negatively affects the area's main production-oriented activities, as well as the population's access to basic services (paragraphs 1.3 and 1.8). The high transportation costs make it difficult to consolidate the integration corridor and affect regional trade across the border at La Balsa. Completing the road will help reduce transportation costs for areas with high economic and production-related potential; strengthen internal communication and regional integration; and facilitate movement of freight and people between areas of production and consumption. Additionally, completion of

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21 Fewer than 500 vehicles drive on the road per day, taking over 3 hours and 45 minutes to travel the 52 km. Current vehicle operation cost is US$0.40/km for light vehicles, US$0.54/km for buses, and US$3.3/km for trucks (optional link 1). Gary Barnes and Peter Langworthy (2003).

22 Report by area undersecretariat 7 – MTOP, 2019.

23 According to the study on project-related disaster risk mitigation (optional link 3), monthly precipitation in the project's area of intervention could increase by 30% compared to current levels.

24 This is above the 2020 target of the national plan of action, which is 11 deaths per 100,000 inhabitants, and above the average of 15.6 deaths for the Americas, based on the World Health Organization's (WHO) *Global Status Report on Road Safety in 2018*.

25 New WHO report (2018).

this axis road will fulfill PBDRF commitments on road integration corridors and promote increased trade between Ecuador and Peru.

1.16 **Gender perspective and local production-related development.** Ecuador has made great strides in improving gender equality, but significant gender gaps persist in education and access to job opportunities. Data from the 2010 census,[26] which includes national-level information disaggregated by gender and by urban and rural areas, indicates that women in both urban and rural areas migrate mainly to seek job opportunities and join their families. Fewer women migrate to pursue education, and women-led households (31.4% in urban areas and 23.9% in rural areas) often achieve lower levels of education. The majority of women-led households achieve a basic level of education, both in rural and urban areas (45.5% and 58.5%, respectively). Generally speaking, women do not attend school due to a lack of economic resources, which is even more common in rural areas. In terms of access to job opportunities, the rate of participation in the labor market (the percentage of the population over age 15) is much lower for women than for men (57% for women and 82% for men). Furthermore, working conditions for women tend to be worse than for men (higher rates of unemployment, a greater percentage of women working at unpaid, vulnerable, and inadequate jobs).[27, 28] In Ecuador, men earn an average of US$73.90/month more than women. Average job income for employed men is US$369.30/month, but US$295.40 for women working in the same conditions.[29] As for the total number of hours of unpaid work, 78.34% are covered by women and 21.66% by men. This demonstrates that women are mainly responsible for household chores and caregiving, while men participate much less in these activities.

1.17 **Inclusion of persons with disabilities.** According to Ecuador's INEC, the total number of persons with disabilities recorded in 2019 was 468,537, of which only 71,949 are active in the labor market. In the province of Zamora-Chinchipe, where the project is located, there are a total of 3,962 persons with disabilities. Meanwhile, in 2018 the National Statistics and Information Technology Institute determined that 3,051,612 people in Peru have some type of disability. Of these, 57% are women, and 77% do not participate in the labor market. Both Ecuador's constitution (through Law 2000-25) and Peru's (through Organic Law 29973) guarantee access for persons with disabilities to the physical environment and services like transportation in urban and rural areas, while eliminating barriers that undermine equal opportunity and autonomy. In that regard, the project's infrastructure will comply with technical specifications for universal accessibility. Furthermore, the project will aim to increase the participation of persons with disabilities in job opportunities in the transportation sector through awareness-raising workshops and advisory services for project implementers, works employees, and beneficiaries, in association with institutions like the National Council for Disability Equality (CONADIS).

1.18 **Border control.** In the future, this project will be supplemented by border services to control people, baggage, goods, and vehicles at the CEBAF on axis road 4

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26 INEC, 2010.

27 The Little Data Book on Gender. (2019). Ecuador.

28 INEC, 2015. Labor indicators, December 2015.

29 Encuesta Nacional de Empleo, Desempleo y Subempleo. INEC (2017).

(Loja–Saramiriza) in La Balsa.[30] This will improve the quality of existing passenger transportation services at the La Balsa border control post. It will also increase coverage of other services, since goods transported by heavy vehicles will also be controlled, once authorization has been granted for goods to transit through international customs at this border post. Other benefits of the CEBAF include a potential reduction in the illicit transit of goods and vehicles; more effective capacity for tax and tariff collection; and reactivation of the local economy due to the increased influx of tourists and light and heavy vehicles.

1.19 **Evidence of the effectiveness of interventions.** Because there is an inverse relationship between exports and domestic transportation costs, the interventions designed to reduce those costs may have a significant impact on exports, particularly in areas where access to ports is more costly. This relationship has been corroborated for the five countries (Brazil, Chile, Colombia, Mexico, and Peru) analyzed in the IBD study "Too Far to Export," which establishes that infrastructure improvements have a positive and significant impact on exports from those five countries. For an Andean country, it is estimated that a 1% drop in transportation costs is associated with a 2.9% increase in product exports. Additionally, the IDB estimates that for countries of the Pacific Alliance, a 1% reduction in ad valorem transportation costs would lead to an increase in exports, ranging from 1.3% in Mexico to 4.5% in Chile.[31] It has been widely demonstrated that national borders affect flows of trade, capital, and labor and create barriers to trade between countries. In neighboring countries, both physical and nonphysical border barriers present the "home bias in consumption" puzzle described by Obstfeld and Rogoff (2001). Studies have also shown that the cost of inefficiencies at border crossings affects the value added of manufactured goods. For example, Hummels et al. (2013) estimate that each additional day in transit at a border crossing costs between 0.6% and 2.1% of the transported good's value (perishable goods, manufactured goods, etc.), and that long delays in transit significantly reduce the probability that international trade in goods will develop successfully.

1.20 In terms of disaster risk management, the evidence shows that it is possible to reduce the risk of landslides using structural measures, such as slope stabilization works, which also reduces public spending on rehabilitation (paragraph 1.11). Various studies show that the benefits of investing in disaster risk reduction are four to seven times greater than recovery costs (Multihazard Mitigation Council (MMC), 2005; Moench et al., 2007; International Risk Reduction Strategy (ISDR), 2011; Kull et al., 2013; Micheler, 2015). Additionally, in order to mitigate residual risks, nonstructural measures can be adopted, such as early warning systems (EWS). These systems are highly effective in reducing economic losses from natural disasters by providing timely warnings to users about damage to roads and detours on alternate routes (Wilhite y Svoboda, 2000). Generally speaking, investments in EWS are economically viable and yield significant socioeconomic returns, with benefits that are 4 to 36 times higher than the system's cost (Wethli, 2014).

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[30] Peru already has CEBAF studies, and this project is included in its budget program. The CEBAF will be built once axis road 4 has been completed, and progress on bilateral commitments will be monitored in coordination with INT.

[31] Molina, D., Heuser, C., Mesquita, M. 2016. "Infrastructure and Export Performance in the Pacific Alliance," IDB study, 2008.

1.21 **Bank knowledge of the road sector and regional integration projects.** The Bank has significant experience in helping countries design and implement regional transportation projects. Over the past 10 years, the Bank has played an important role in developing Ecuador's transportation sector and has approved US$350 million in road corridor operations, financing the rehabilitation of 975 km of road (around 10% of the NRS) during the first program on maintenance and standards of service.[32] The MTOP was the executing agency, and the project achieved moderately satisfactory outcomes.[33] Regarding the Bank's regional integration experience, operation ATN/JF-14202-RG financed designs to improve control of border crossings in Huaquillas and Rumichaca, along the border between Ecuador and Colombia. In 2014, the IDB approved a border control improvement operation (loan 3324/OC-EC) and provided resources to improve control systems, as well as to procure control systems, technology, and equipment. Currently, a road project is being executed on national route 19 (loan 3836/OC-AR) in the province of Córdoba in Argentina, which is part of the bi-oceanic corridor. There is also an operation underway for a structuring project for the Agua Negra tunnel between Argentina and Chile (loan 3867/OC-RG), in addition to the border infrastructure program at Cristo Redentor between Argentina and Chile (loans 4418/OC-AR and 4652/OC-AR). The Bank led the design and execution of border crossing operations for Ecuador-Colombia, Guatemala-Nicaragua, Argentina-Chile, and Costa Rica-Panama. Lastly, operation ATN/JF-15752-EC aimed to ensure the resilience of infrastructure and public services after the earthquake that hit the coast of Ecuador in April 2016. Using the experience of the most relevant public institutions in the sector, a resilience study was conducted on Ecuador's NRS, which included a plan of action that proposed the following measures: (i) promote crossborder cooperation with Colombia and Peru in order to consolidate the road system; and (ii) implement a pilot system for monitoring roads that are highly threatened by mass movements that affect the resilience of the NRS.[34] These measures aim to make the road system more integrated, innovative, planned, robust, and supported, thereby increasing its resilience to natural disasters.

1.22 **Lessons learned.** For loan 2201/OC-EC in Ecuador where the MTOP executed road rehabilitation projects, the PCR made the following recommendations, which have been taken into account in this operation's design: (i) review MTOP strategic planning, priority project components related to national strategies, and budget prioritization processes within the Ministry of Economy and Finance (MEF) and other government planning entities; (ii) review the processes for gathering statistical information to measure results; (iii) review the processes for closure of contracts; (iv) periodically review the program Operating Regulations (optional link 10) and amend it as appropriate; and (v) review the process for managing procurement files and payments. The main lessons learned from regional integration and road integration projects that have been incorporated into this operation's design include the following: (i) have a comprehensive and complementary approach for interventions; and (ii) include binational coordination for general and technical project management. To that end, the

[32] Loans executed: loan 2201/OC-EC, First Road Infrastructure and Maintenance Program.

[33] Project completion report (PCR) for the First Road Infrastructure and Maintenance Program (loan 2201/OC-EC), November 2018.

[34] Estudio de Resiliencia Para la Red Vial Estatal del Ecuador, AECOM 2019.

Bank has respectively applied these lessons by establishing missions and technical working groups.

1.23 **Strategy of the Government of Ecuador**. The program is consistent with the government's strategy as defined in the National Development Plan 2017-2021 and the National Territorial Strategy, which aims to increase connectivity and productive infrastructure. The program is also in line with the PBDRF.

1.24 **Strategic alignment.** The project is aligned with the IDB Group Country Strategy with Ecuador (2018-2021) (document GN-2924). Specifically, it supports productivity and private sector development as drivers of growth, with the strategic objective of fostering access to export markets by increasing regional connectivity. It is also aligned with the IDB Group Country Strategy with Peru (2017-2021) (document GN-2889) and its strategic objective of improving available infrastructure and supporting the country in achieving sustained growth so as to foster social advances in a context of environmental stability and ongoing support for regional integration processes. The operation is consistent with the Update to the Institutional Strategy 2010-2020 (document AB-3008) and is strategically aligned with the development challenges of economic integration, as it seeks to improve binational crossborder connectivity, and productivity and innovation, by introducing improvements in the region's transportation and logistics infrastructure network, which will translate into mobility and productivity gains for economic agents as a result of more effective and efficient access to services and inputs. The program is also aligned with the crosscutting theme of climate change and sustainable development, as it includes slope stabilization measures to mitigate the risk of landslides that are caused by rain and potentially exacerbated by climate change. In all, 31.48% of the operation's resources will be invested in adaptation to climate change activities, according to the joint methodology of the multilateral development banks for tracking climate change adaptation finance. These resources contribute to the IDB Group target of increasing financing for climate-related projects to 30% of all operation approvals by the end of 2020. Additionally, the program is aligned with gender equality and diversity, as it aims to increase women's participation in decision-making and strengthen their capacity for production and commercialization. The operation will contribute to the Corporate Results Framework (CRF) 2016-2019 (document GN-2727-6) through the indicator of "kilometers of road built and/or rehabilitated."

1.25 The program is consistent with the Sustainable Infrastructure for Competitiveness and Inclusive Growth: IDB Infrastructure Strategy (document GN-2710-5), as it supports the strategic principles and priority areas for action on economic growth, access to infrastructure services, and support for infrastructure that fosters regional and global integration. It is consistent with: (i) the Transportation Sector Framework Document (document GN-2740-7), for the lines of action of boosting connectivity between isolated communities and supporting improvements in infrastructure; (ii) the Integration and Trade Sector Framework Document (document GN-2715-8), with the objective of improving transportation infrastructure, reducing logistics costs, and boosting trade; (iii) the Gender and Diversity Sector Framework Document (document GN-2800-8), as it promotes female labor force participation with better quality jobs through internships, as well as training to empower women and strengthen their entrepreneurial capacity and participation in decision-making processes; (iv) the Sector Strategy to Support

Competitive Global and Regional Integration (document GN-2565-4), as the intervention fulfills the criterion of regional additionality by coordinating national efforts within a vision and supranational plan; and (v) the Disaster Risk Management Policy (document GN-2354-5), as the objective of Directive A-2 (risk and project viability) is to include the necessary measures to reduce disaster risk to acceptable levels as determined by the Bank on the basis of generally accepted standards and practices. Lastly, the operation includes elements from the IDB Sustainable Infrastructure Framework, as the works designs take precipitation levels into account for various climate change scenarios, so as to ensure infrastructure resilience. The operation is included in the Update to Annex III of the 2019 Operational Program Report (document GN-2948-2).

1.26 The project proposes activities to promote gender equality in the area of intervention in order to close gaps in equality (paragraphs 1.16 and 1.17). These activities are: (i) establish an agreement with the Technical University of Loja to identify good practices and lessons learned from training women to use heavy machinery and connecting female graduates with the project's contracting companies; (ii) provide training, with the Ministry of Transportation, to contractors and other related entities on gender equity in the workplace, including topics like employment opportunities and responsible hiring processes that address gender issues, sexual harassment in the workplace, and violence against women; (iii) design an internship program with the Technical University of Loja to strengthen participation of women who are studying engineering in the transportation sector through the project; and (iv) design and execute workshops to empower women coffee and cocoa producers in coordination with the Ministry of Agriculture,[35] providing support for business plans, marketing, machinery, and issues related to rights, empowerment, leadership, and violence prevention.

1.27 **Innovative disaster risk management for landslides.** For the first time in Ecuador's transportation sector, this project will include a pilot project that will be implemented on a road in order to manage disaster risk related to landslides. Some of the innovative technologies used by other countries that will be introduced, adopted, and set up for this pilot project are: (i) the use of drones to obtain aerial images and artificial intelligence algorithms in order to detect critical areas where future landslides may occur; and (ii) an early warning system that will use sensors and devices to report precipitation and send rain and landslide warnings directly to the smartphones of road infrastructure users, which will provide early alerts on road closures and detours on alternate routes when it is highly likely that a landslide will occur. These measures will support the development of sustainable infrastructure.

B. Objectives, components, and costs

1.28 **Project objective.** The general objective is to help improve economic integration of Ecuador's southern and southeastern regions, in the border provinces of Loja and Zamora-Chinchipe.

1.29 The specific objective is to help improve the quality, coverage, and connectivity of border roads by rehabilitating the Bellavista-Zumba-La Balsa road.

[35] The IDB is working in this area with the Ministry of Agriculture, which will strengthen these experiences.

1.30 In order to achieve the objectives, the project is structured into the following components:

1.31 **Component 1. Civil works, oversight, and road safety audit (US$140,868,000).** This component will finance: (i) improvements to the approximately 52 kilometers of the Bellavista-Zumba-La Balsa road, which involves rehabilitating approximately 31 kilometers of existing road and building approximately 21 kilometers of bypass roads between Progreso, Isimanchi, Zumba, and El Chorro, including the environmental and social compensation plan; (ii) oversight of works on the main road and access from the existing road; (iii) a road safety audit review; and (iv) readjustments and contingencies.

1.32 The road to be built will be paved with asphalt surfacing. It will be 7 meters wide, in addition to the shoulders (0.5 meters wide) and ditches (0.85 meters wide) on either side of the road, which classifies it as a Class III road.[36] The estimated driving speed is 60 km/h (optional link 2). Improvements to the section will include slope stabilization works to reduce the risk of landslides, taking climate change scenarios into account (optional link 3). From the design stage, the road will include road safety considerations as well as facilities promoting the inclusion of persons with disabilities.

1.33 **Component 2. Disaster risk management for landslides and crosscutting issues (US$2,436,000).** This component will introduce, adopt, and set up a pilot project to manage disaster risk related to landslides using innovative technologies and measures (paragraph 1.27). The main activities of this component will focus on consulting services and procurement of goods in order to implement the pilot project on this road. These activities will be: (i) implementation of an early warning system; (ii) a study on the efficiency and utility of green and hybrid infrastructure; and (iii) a feasibility study and final design proposal for mitigation works on the Vilcabamba-Bellavista section of axis road 4 (optional link 7). All of the innovative technologies and measures introduced, adopted, and set up will be evaluated with respect to their efficiency and future applicability in the country.

1.34 This component includes: (i) workshops to raise awareness about the participation of women in the project, internships, and jobs for women in the agreement with local universities; and (ii) managing other activities in coordination with the Ministry of Agriculture and Livestock to empower women coffee and cocoa producers by strengthening their marketing and leadership skills.

1.35 **Audits, monitoring, and evaluation (US$280,000).** This will finance audits and the project's midterm and final evaluations.

1.36 **Other costs (US$1.2 million).** This will finance expropriations and compensation for the land affected by road construction.[37]

1.37 **Beneficiaries.** The beneficiary regions of this binational project will be the southern and southeastern provinces of Ecuador, as well as the northern region of Peru, which are connected to the Northern Amazon axis and its markets in coastal, highlands, and jungle areas. These regions have isolated rural border populations and large provincial capitals with regional connectivity needs, such as the cities of

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[36] Manual de Normas de Diseño Geométrico 2003 (MTOP).

[37] This will be funded entirely by local contributions.

Loja and Jaén (paragraphs 1.3 and 1.10). The project will help optimize the movement of people and vehicles and will promote regional integration within Ecuador, as well as commercial trade and trade in services with Peru. The main beneficiaries will be the populations in the provinces of Loja and Zamora-Chinchipe in Ecuador (634,130 inhabitants) and the populations in the departments of Cajamarca, Amazonas, and Loreto in Peru (392,620 inhabitants), for a potential total of at least 1,026,750 people who will benefit from the project.

C. Key results indicators

1.38 **Outcomes and indicators.** The project's main outcomes will be verified through the following indicators: (i) days per year with severely limited traffic due to landslides (days/year); (ii) the cost of clearing debris after a landslide (US$/km/year); (iii) vehicles traveling on the Bellavista-La Balsa section (number of vehicles); (iv) average travel time for each type of vehicle (minutes); (v) average operating cost for each type of vehicle (US$/km); and (vi) increased marketing and leadership capacities of women agricultural producers selected from the area (number of workshops held). The proposed impact indicators for the project are: (i) trade in commercial goods that passes through the border crossing on axis road 4; and (ii) the reduction in fatal accidents on the road.

1.39 **Economic evaluation.** The economic evaluation conducted on the works (cost-benefit analysis) yielded an economic internal rate of return (EIRR) of 13.96%. A sensitivity analysis was also performed to explore one scenario where costs increased by 10% and another scenario where benefits decreased by 10%. These proposed scenarios follow the standard procedures frequently used by the MTOP. Additionally, the sensitivity analysis examined another scenario to reflect the uncertainty of the most important measures that would help increase traffic (such as Ecuador joining the Pacific Alliance, and implementation of binational development plans in the region of the project).

1.40 The results of the analysis are: (i) travel time will drop from 3 hours and 45 minutes to 50 minutes; (ii) the number of adverse events will decline from 250 per year to 50 per year; (iii) the cost of operating a fleet of light vehicles and buses will decrease by 50%, as will the cost each ton-kilometer of freight on this section of road; (iv) maintenance costs for the new road will fall by US$860,000 per year due to the decrease in adverse events; and (v) the reduction in accidents will save two lives per year. The complete analysis can be found in the economic evaluation of the project (optional link 1) and is summarized below in Table 1.

Table 1. Results of the cost-benefit and sensitivity analyses

Project	Length (km)	Investment cost (US$ million)	Net present value (US$ million)	EIRR (%)		
				Baseline	Sensitivity analysis	
					EIRR (10% increase in costs)	EIRR (10% decrease in benefits)
Bellavista-La Balsa section of axis road 4	52	118.65	269.8	13.96	12.88	12.88

II. FINANCING STRUCTURE AND MAIN RISKS

A. Financing instruments

2.1 **Cost and financing.** Bank financing will be provided through a specific investment loan. The total cost of the program is US$144,784,000, financed with US$128,200,000 from the Bank's Ordinary Capital and US$16,584,000 from local contributions.

Table 2. Program financing (US$)

Components	IDB	Local contribution	Total	%
Component 1.- Civil works, oversight, and road safety audit	**125,775,000**	**15,093,000**	**140,868,000**	**97.30**
Rehabilitation works and construction of bypass roads on the Bellavista-Zumba-La Balsa section	107,500,000	12,900,000	120,400,000	83.16
Oversight of rehabilitation works and construction of bypass roads on the Bellavista-Zumba-La Balsa section	5,375,000	645,000	6,020,000	4.16
Readjustments and contingencies	12,900,000	1,548,000	14,448,000	9.98
Component 2.- Disaster risk management for landslides and crosscutting issues	**2,175,000**	**261,000**	**2,436,000**	**1.68**
Procurement, installation, and maintenance of equipment and software for early warning system	200,000	24,000	224,000	0.15
Software development and training for the operation of the early warning system	300,000	36,000	336,000	0.23
Study evaluating the efficiency and utility of green or hybrid infrastructure	800,000	96,000	896,000	0.62
Feasibility study and final design proposal for mitigation works on the Vilcabamba-Bellavista section of axis road 4	700,000	84,000	784,000	0.54
Workshops on crosscutting issues of gender, productivity, and universal accessibility	175,000	21,000	196,000	0.14
Administrative costs	**250,000**	**30,000**	**280,000**	**0.19**
Audits	100,000	12,000	112,000	0.08
Midterm evaluation	75,000	9,000	84,000	0.06
Final evaluation	75,000	9,000	84,000	0.06
Other costs	**0**	**1,200,000**	**1,200,000**	**0.83**
Expropiations	0	1,200,000	1,200,000	0.83
TOTAL	**128,200,000**	**16,584,000**	**144,784,000**	**100**

2.2 The execution period will be five years, and disbursements will be made according to the schedule below.

Table 3. Disbursement schedule (US$)

Year	1	2	3	4	5	Total
IDB	22,630,000	17,608,750	17,583,750	18,808,750	51,568,750	**128,200,000**
Local	1,206,600	2,113,050	2,110,050	2,257,050	8,897,250	**16,584,000**
Total	23,836,600	19,721,800	19,693,800	21,065,800	60,446,000	**144,784,000**
%	16.46	13.62	13.60	14.55	41.75	**100**

B. Environmental and social risks

2.3 In accordance with the Environment and Safeguards Compliance Policy (Operational Policy OP-703), the project has been classified as a Category "A" operation. The level of risk is significant due to potential impacts and direct risks considered to be of high magnitude, temporary, and localized, for which implementable prevention, mitigation, and compensation measures have been designed. The project's impacts are mainly related to the execution of activities described in the final design for axis road 4, which include the physical resettlement of 22 families and impacts on 67 hectares of critical natural habitat. The project will be implemented on or near existing dirt roads, with an established and defined right-of-way along the entire length of the road. This will be widened in some sections and will have bypass roads so as to avoid affecting more families in small towns.

2.4 The project's main social risks and impacts are related to the displacement of families and to temporary effects during the construction phase, when works are executed to rehabilitate, pave, and open a new segment on a large part of the road. This entails adapting the established right-of-way so that there are no informal occupants, in order to ensure compliance with local and international standards for this type of road, which will have a lasting effect on homes, private land, crops, and improvements.

2.5 Additionally, during construction, the intervention will have minor social impacts related to mobility restrictions for the local population, including vulnerable families. The road improvement works are expected to have other impacts and risks related to healthcare and occupational and community safety, due to potential accidents involving road users and workers, restricted access due to soil movement, heavy machinery traffic, and dust and noise-related disturbances.

2.6 The Bank contracted additional studies from a consulting firm that identified remnants of forests and bushes along the road, which are considered to be a critical natural habitat based on field surveys and existing literature. Alternative locations and engineering designs were also evaluated in order to prevent and minimize the impact on these native areas. However, it will not be possible to prevent a direct impact on approximately 67 hectares of these native areas due to expansion of the right-of-way and new bypass roads to avoid towns. Therefore, the MTOP will use the loan proceeds to implement significant remediation measures for an area at least three times the size of the affected critical natural habitat. Based on preliminary studies, it is estimated that 201 hectares located near or in the project area will be remediated. The MTOP will also sign specific agreements with local governments in order to manage conservation of these areas.

Additionally, other measures will be implemented for training, awareness-raising, and institutional strengthening.

2.7 During the operational phase, the main temporary negative impacts and risks are related to disturbances from maintenance works, road accidents, and potential indirect impacts associated with the an increase in the cost of land, deforestation, expansion of farmland, and possible changes to land use for agricultural activities. No impacts are expected on indigenous peoples, protected areas, wetlands, Ramsar sites, or cultural and historic sites.

2.8 During the project preparation between June and September 2019, two significant public consultation processes were carried out, in accordance with Bank policies. For the people subject to resettlement, individual consultations were also conducted. At the end of both rounds of consultation, it was concluded that the project has support from the stakeholders in the area of intervention. The concerns raised had to do with issues related to the road corridor's design and path, impacts from construction (dust, noise, and machinery traffic), compensation, hiring local labor, and the start date of the works. All of the socioenvironmental concerns are addressed in the project's Environmental and Social Management Plan (ESMP). For further information, please see the public consultation report on the following website (https://www.iadb.org/en/project/RG-L1132).

2.9 The Environmental and Social Impact Assessment (ESIA) includes measures to prevent, reduce, mitigate, and offset the project's potential environmental and social impacts and risks. The project also includes an ESMP, an involuntary resettlement plan, a biodiversity action plan, a community relations plan, and a consultation plan.

2.10 The ESMP will be part of the program Operating Regulations, which set forth environmental and social requirements to ensure that project is executed in compliance with Bank safeguards and with the terms of Annex B of the ESMR (required link 3).

2.11 Additionally, a medium-high risk was identified if appropriate socioenvironmental procedures are not implemented to raise community awareness of the project, clear the right-of-way, and provide compensation, which would conflict with Bank policies and prevent the project from being executed. This risk will be mitigated through the following actions: (i) inclusion of the ESMP in the contract for the works supervised by the oversight manager hired for the project, the contract manager, as well as an environmental supervisor from the MTOP; and (ii) procurement of works whose final designs incorporate the recommendations from the public consultations.

C. Fiduciary risks

2.12 The Bank conducted an Institutional Capacity Assessment System (ICAS) analysis in 2019 that identified the executing agency's main weaknesses, opportunities for improvement, and strengths. The Bank also held a risk workshop that identified risks including the main fiduciary risks. These risks were determined to be medium-high and related to delays in project execution due to the following: (i) the current MTOP team does not have experience managing projects financed by the IDB or other international organizations; and (ii) adequate coordination is lacking between the MTOP central office and area offices, which would cause delays in

approving reports that measure program results. Therefore, the following mitigation measures are proposed: (i) strengthen the project management team (PMT), specifically the procurement specialist and financial specialist, and provide training on Bank policies and technical assistance; (ii) include monitoring responsibilities in the program Operating Regulations in order to fulfill budget requirements and processes for approving payroll and monitoring and evaluation reports; and (iii) ensure that the executing agency has a management team for program execution that includes a financial manager and a procurement manager who can monitor these issues.

D. Other risks and key issues

2.13 **Design risks.** The MTOP contracted a study entitled "Update to the Pre-Preliminary, Preliminary, and Final Feasibility, Environmental Impact, and Engineering Studies for Section 2 of the Bellavista-Zumba-La Balsa Road." This contract was signed with a local consulting company through the public procurement portal, using MTOP funds. The contract is scheduled to be completed in November 2019 once the final studies have been submitted. A medium-low "development" risk was identified, as the quality of the contracted design studies may not meet expectations, which would cause delays and cost overruns for the works. In order to mitigate this risk, the Bank has requested that before the works contractor begins the works, the oversight manager will be contracted for activities such as approving the road redesign and leveling, and conducting a road safety audit.

2.14 The following public management and governance risks were identified.

2.15 Medium-high risk: (i) the MTOP team lacks training on technical, environmental, and monitoring and evaluation considerations for executing programs with multilateral organizations, which would cause delays in execution. The proposed mitigation measure is to strengthen and provide training on Bank policies to the PMT designated by the MTOP (a program coordinator, an environmental specialist, and a planning and monitoring specialist), from the beginning of execution until the loan is closed; and (ii) the lack of adequate coordination between the MTOP central office and area offices would lead to delays in the approval of payroll payments and reports for the measurement of program results, resulting in delays in executing the works and noncompliance with the processes set forth in the monitoring and evaluation plan (required link 2). To mitigate this, monitoring responsibilities will be incorporated into the program Operating Regulations in order to fulfill the budget requirements and processes for approving payroll and monitoring and evaluation reports.

2.16 **Additional costs.** The MTOP and the Bank have reviewed the budget for the project's studies and engineering designs in order to verify that these costs are within reasonable parameters compared to reference costs for similar works in the country (optional link 2). In the event that the cost of the works increases, which is classified as a medium-low risk, a contingency amount has been incorporated into Component 1 (paragraph 1.31) as a mitigation measure.

2.17 **Sustainability of the investments.** One of the risks that was identified and classified as medium-low is the fact that the MTOP does not have sufficient resources for maintaining the road once it is completed. However, the MTOP has

confirmed that road maintenance funds will come out of the MTOP budget lines in the Ecuadorian government's general national budget. Additionally, given the high number of landslides in the scenario "without the project," the maintenance costs for the new road are expected to be even lower than the current maintenance costs. Maintaining the road where the program intervention occurred will be the responsibility of the MTOP southern area undersecretariat and the provincial office of Zamora, which will assume responsibility for this task once the works have been completed. The MTOP road maintenance policy has satisfactory results, which can be found in the road maintenance plan (optional link 9).

III. Implementation and Management Plan

A. Implementation mechanism

3.1 **Borrower and executing agency.** The borrower will be the Republic of Ecuador, and the executing agency will be the MTOP. The National Institute of Meteorology and Hydrology (INAMHI) and the National Risk and Emergency Management Service (SNGRE) will participate in disaster risk management activities (Component 2), and the Ministry of Agriculture and Livestock (MAG) will participate in activities to include women as beneficiaries of road connectivity (Component 2). The MTOP will enter into interagency agreements as needed in order to implement the activities under Component 2.

3.2 Additionally, the MTOP is responsible for contracting the engineering designs and oversight of the corresponding works, which it has done in past programs with the IDB and other multilateral lending organizations. These programs financed activities that were within the purview of the MTOP, which used its own funds and outside financial assistance for execution. With employees from its own organization, the MTOP is in charge of preparing bidding documents for national competitive bidding (NCBs) and international competitive bidding (ICBs) processes; supervising and monitoring the execution of consulting contracts; and executing the contracted works. The MTOP follows the procedures required for phased public spending. Within its organizational structure, the MTOP has technical areas that execute, monitor, and evaluate works, as well as administrative and financial areas that work in coordination. For managing international loans, the MTOP has the Office of Loans and International Cooperation (DCCI), which coordinates program execution with existing internal areas of the MTOP and is in charge of relations with the Bank.

3.3 **The special contractual conditions precedent to the first disbursement of the loan are as follows: (i) the program Operating Regulations (optional link 10) will be approved and in force in accordance with the terms and conditions previously agreed upon with the Bank; and (ii) the executing agency will designate a PMT, which will include an environmental specialist and a social specialist, based on the profiles and activities previously agreed upon with the Bank.** These conditions are considered essential for ensuring the program's proper execution, as they define the processes to be followed. They also help ensure that the borrower demonstrates preparedness and has a competent technical and administrative team that is able to begin executing the operation. This condition is important for ensuring that the borrower has the human resources needed to fulfill the Bank requirements set forth in the loan contract.

3.4 **Special contractual conditions for execution:** Through the executing agency, the borrower agrees to: (i) contract and begin project oversight at least one month prior to the order to initiate the works contract; (ii) no later than one month after the works contract has been awarded, designate a professional and technical team that will carry out the various works supervision activities, including socioenvironmental supervision; and (iii) present evidence that the executing agency has signed interagency agreements necessary for implementing the activities under Component II. These conditions are essential, as the first one ensures that the road redesign and road safety audit can verify the quality of the updated designs contracted by the MTOP, before works begin. The second clause will allow the executing agency to identify a project team within its organizational structure. This condition is important in order to ensure that the borrower has the human resources needed to fulfill the Bank requirements set forth in the loan contract.

3.5 **Disbursements.** Funds will be disbursed through advances, based on the project's actual liquidity needs for a period of no more than 180 days. Funds will be advanced once the executing agency has accounted for at least 80% of the funds received.

3.6 **Audits.** During execution, the MTOP will present audited financial statements of the program annually, in accordance with the terms required by the Bank (document OP-273-12 or updated version). The audited financial statements will be submitted no later than 120 days after the close of the fiscal year, and the final statements will be submitted no later than 120 days after the last disbursement.

3.7 **Procurement.** Procurement will follow the Policies for the Procurement of Goods and Works Financed by the Inter-American Development Bank (document GN-2349-9 or updated version) and the Policies for the Selection and Contracting of Consultants Financed by the Inter-American Development Bank (document GN-2350-9 or updated version). Program financial management will be conducted in accordance with the Financial Management Guidelines for IDB-financed Projects (document OP-273-6).

3.8 **Retroactive financing.** The Bank may retroactively finance, as a charge against the loan proceeds, up to US$25.64 million (20% of the proposed loan amount), and recognize from the local contribution up to US$3.32 million (20% of the estimated local contribution) in eligible expenditures incurred by the borrower, provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after the project profile approval date (22 March 2019) and before approval of the loan by the Bank's Board of Executive Directors, but will not include expenditures incurred more than 18 months prior to the loan approval date.

B. Summary of monitoring and evaluation measures

3.9 The objective of the monitoring and evaluation plan is to support program execution, implementation of the proposed activities, and physical and financial execution of outputs. The plan will monitor three main elements: (i) program administration and control; (ii) activities and outputs; and (iii) program outcomes.

3.10 In order to monitor and evaluate the program's expected outcomes, ex ante and ex post methodologies will be used, as well as an ex post cost-benefit analysis. The

ex post cost-benefit analysis of the works financed by the program will use the same model as the ex ante analysis. This analysis will be conducted in two phases. In the first phase, the program's expected benefits will be updated, with costs remaining constant, in order to measure whether the benefits realized are sufficient for recovering the investment. In the second phase, both the benefits and the costs will be updated in order to measure whether the project ended up yielding a return on investment, given actual costs and benefits. This phased analysis will control for the effects of a possible exogenous cost increase. The ex post evaluation will measure the serviceability and condition of the road at the time of evaluation. In addition, at the end of the project, the pilot project for managing disaster risks of landslides will also be evaluated to determine its applicability for extension or replication on other sections of the national road system.

Development Effectiveness Matrix		
Summary	RG-L1132	
I. Corporate and Country Priorities		
1. IDB Development Objectives	Yes	
Development Challenges & Cross-cutting Themes	-Productivity and Innovation -Economic Integration -Gender Equality and Diversity -Climate Change and Environmental Sustainability	
Country Development Results Indicators	-Roads built or upgraded (km)*	
2. Country Development Objectives	Yes	
Country Strategy Results Matrix	GN-2924 y GN-2889	Ecuador: Foster access to export markets. Peru: Improve the available infraestructure.
Country Program Results Matrix	GN-2948-2	The intervention is included in the 2019 Operational Program.
Relevance of this project to country development challenges (If not aligned to country strategy or country program)		
II. Development Outcomes - Evaluability		Evaluable
3. Evidence-based Assessment & Solution	9.3	
3.1 Program Diagnosis	3.0	
3.2 Proposed Interventions or Solutions	3.6	
3.3 Results Matrix Quality	2.7	
4. Ex ante Economic Analysis	10.0	
4.1 Program has an ERR/NPV, or key outcomes identified for CEA	3.0	
4.2 Identified and Quantified Benefits and Costs	3.0	
4.3 Reasonable Assumptions	1.0	
4.4 Sensitivity Analysis	2.0	
4.5 Consistency with results matrix	1.0	
5. Monitoring and Evaluation	6.7	
5.1 Monitoring Mechanisms	0.7	
5.2 Evaluation Plan	6.0	
III. Risks & Mitigation Monitoring Matrix		
Overall risks rate = magnitude of risks*likelihood	Medium	
Identified risks have been rated for magnitude and likelihood	Yes	
Mitigation measures have been identified for major risks	Yes	
Mitigation measures have indicators for tracking their implementation	Yes	
Environmental & social risk classification	A	
IV. IDB´s Role - Additionality		
The project relies on the use of country systems		
Fiduciary (VPC/FMP Criteria)	Yes	Financial Management: Budget, Treasury, Accounting and Reporting. Procurement: Information System, Price Comparison, National Public Bidding.
Non-Fiduciary	Yes	Strategic Planning National System, Monitoring and Evaluation National System.
The IDB's involvement promotes additional improvements of the intended beneficiaries and/or public sector entity in the following dimensions:		
Additional (to project preparation) technical assistance was provided to the public sector entity prior to approval to increase the likelihood of success of the project	Yes	TCs that have financed studies that supported the program: RG-T3328 (by CCS): Support to the Procedures for the Evaluation of Climate & Disaster Risk to Foster Resilience and Sustainable Development RG-T3369 (by RND): Study on the Management of Disaster Risk -A Macroeconomic Cost-Benefit Analysis to reduce Vulnerability

Note: (*) Indicates contribution to the corresponding CRF's Country Development Results Indicator.

In the south and southeast region of Ecuador there exists a situation of isolation and poverty in greater levels to national averages (~73% of the population therein) in part due to low connectivity and the resulting limited access of the population to basic services. Ecuador and Peru have ratified presidential peace accords that prioritize the conclusion of roads for the cross-border transit of people, vehicles, and merchandise. Ecuador has met its commitment, except in Road Axis 4 where there are 52 kilometers that have not been intervened, the Bellavista-Zumba-La Balsa road. This road connects northern cities of Peru allowing them access to Ecuador and the Amazon river including the coast and the Paita Port. Furthermore, this road is strategic for mobilizing commerce from Ecuador to Brazil and the Atlantic and for Peru given its integration to Brazil. This road connects the coffee value chain from Ecuador – raw material – to Peru where it is processed. Beyond negatively impacting productive activities in this cross-border zone in the south of Ecuador this road is exposed to natural threats like mudslides. The area being intervened by the project registered 23% of all mudslides in the country between 2000-2018 (1,600 events), with an average of 8 events per month. Road conditions jeopardize economic performance given the high cost of transporting cargo and passengers. In this road axis there are 2 fatalities registered on average per year given low visibility, its narrowness, and lack of illumination. Therefore, the program has as its general objective to improve the economic integration of the south and southeastern regions of Ecuador, in the border provinces of Loga and Zamora Chinchipe. The specific objective is to contribute to improving the quality, coverage, and connectivity of the border through the rehabilitation of the road Bellavista-Zumba-La Balsa. The program will finance the civil works necessary including the reinforcement of slopes in the road to reduce the high risk of mudslides. Furthermore, an early alert system will be put in place for users of the road in the case of adverse natural events. In the long run it is expected that commercial exchange will increase through this road and that there will be a reduction in fatalities in the road. Other results include the reduction in the number of days per year with circulation restriction given mudslides on the road, the reduction in maintenance costs due to debris following mudslides; as well as a reduction in the average cost to operate a vehicle on the road and in the time it takes to transit the stretch. The economic analysis shows that the project is of net benefit to society. A reflexive analysis of achieved results will be undertaken at closure as well as an ex-post cost benefit analysis.

RESULTS MATRIX

Project objective:	The general objective is to help improve the economic integration of Ecuador's southern and southeastern regions, in the border provinces of Loja and Zamora-Chinchipe. The specific objective is to improve border road quality, coverage, and connectivity by rehabilitating the Bellavista-Zumba-La Balsa road.

EXPECTED IMPACT

Indicators	Unit of measure	Baseline	Baseline year	Final target 2024	Means of verification	Comments
Impact: Improve the economic integration of Ecuador's southern and southeastern regions, in the border provinces of Loja and Zamora-Chinchipe						
Commercial trade in goods that passes through the border crossing on axis road 4	Ton/day	0	0	15	Report from Ecuadorean Customs	The baseline is zero because currently no goods cross the border.
Reduction in fatal road accidents through implementation of the pilot plan to manage disaster risk for landslides.	Number of fatal accidents prevented	0	0	2	Accident report - Ministry of Transportation and Public Works (MTOP)	

EXPECTED OUTCOMES

Indicators	Unit of measure	Baseline	Baseline Year	Final target 2024	Means of verification	Comments
Specific objective: Help improve border road quality, coverage, and connectivity by rehabilitating the Bellavista-Zumba-La Balsa road						
Days per year with severely restricted traffic due to landslides on the Bellavista-La Balsa section of axis road 4	Number of days/year	140	2019	20	Traffic study - MTOP area undersecretariat	
Cost of clearing debris after a landslide	US$/km/year	16,538	2019	0.00	Road maintenance report - MTOP area undersecretariat	
Vehicles traveling on the Bellavista-La Balsa section of axis road 4	Total number of vehicles per year	251	2019	497	Traffic study - MTOP area undersecretariat	
Average travel time for light vehicles, buses, and trucks on the Bellavista-La Balsa section of axis road 4	Minutes	225	2019	50	Traffic study - MTOP area undersecretariat	
Average cost of operating a light vehicle on the Bellavista-La Balsa section of axis road 4	US$/km	0.40	2019	0.20	Traffic study - MTOP area undersecretariat	
Average cost of operating a bus on the Bellavista-La Balsa section of axis road 4	US$/km	0.54	2019	0.27	Traffic study - MTOP area undersecretariat	
Average cost of operating a truck on the Bellavista-La Balsa section of axis road 4	US$/km	3.30	2019	1.65	Traffic study - MTOP area undersecretariat	
Increase in marketing and leadership capacities of selected female agricultural producers in the area	Number of workshops held	0	2019	10	Annual program reports (with information provided by the Ministry of Agriculture)	Business plans and marketing strategies will be developed for female agricultural producers, as well as pro-gender leadership and rights empowerment.

OUTPUTS

Outputs	Unit of measure	Baseline	Baseline year	Final target 2024	Means of verification	Comments
Component 1: Civil works, oversight, and road safety audit						
Kilometers of road rehabilitated or built	km	0	2019	52	Provisional acceptance certificate report – MTOP	Includes slope stabilization to prevent landslides at critical locations.
Number of critical landslide areas with slope stabilization works identified as highly important on the Bellavista-La Balsa section of axis road 4	Number of critical areas with stabilization works	0	2019	22	Provisional acceptance certificate report – MTOP	The Study to Mitigate the Project's Disaster Risk (optional link 3) identifies 83 critical landslide areas on the Bellavista-La Balsa section of axis road 4, of which 22 are highly important.
Component 2: Disaster risk management for landslides and crosscutting issues						
Rain gauge stations installed and operational in the project's area of intervention	Number	0	2019	4	Annual program implementation report	
Duplicate warning measures developed and operational	Number	0	2019	2	Annual program implementation report	Including the smartphone app, website, or radio
Interagency communication protocol developed and operational for implementation of the early warning system	Number	0	2019	1	Annual program implementation report	Protocol between the MTOP, INAMHI, ECU911, and SNGRE for implementing the early warning system in the transportation sector for the Bellavista-La Balsa section of axis road 4
Pilot study conducted to detect possible landslide areas along the entire section of axis road 4	Number	0	2019	1	Annual program implementation report	Execution of this pilot will include two key activities: (i) installing drones that have sufficient capacity; and (ii) installing and operating the artificial intelligence algorithm.
Green or hybrid infrastructure measures introduced and pilot-tested, in order to evaluate their efficiency and applicability for the country	Number	0	2019	1	Annual program implementation report	
Final design proposal developed for mitigation works to reduce the risk of landslides on section 1	Number	0	2019	1	Annual program implementation report	

Outputs	Unit of measure	Baseline	Baseline year	Final target 2024	Means of verification	Comments
Pilot project on marketing and leadership developed and executed for women from coffee- and cocoa-producing families	Women trained	0	2019	100	Annual program reports (with information provided by the Ministry of Agriculture)	Approximately 554 families belong to the 14 organizations in the region.
Internship program with the University of Loja and the project	Internships	0	2019	10	Project documents and agreement	Agreements will be established so that female engineering students can participate in internships and obtain employment in the sector.

FIDUCIARY AGREEMENTS AND REQUIREMENTS

Country:	Ecuador
Project number:	RG-L1132
Name:	Border Integration Project – Axis Road 4, Bellavista-Zumba-La Balsa Road, Zamora-Chinchipe Province
Executing agency:	Ministry of Transportation and Public Works (MTOP)
Fiduciary team:	Carolina Escudero and Marcela Hidrovo (FMP/CEC)

I. SUMMARY

1.1 The fiduciary agreements for program procurement and financial management consider the following: (i) the country's fiduciary context; (ii) the fiduciary risk assessment; (iii) activities to execute and supervise the previous loan executed by the MTOP (loan 2201/OC-EC); (iv) assessment of the MTOP's institutional capacity; and (v) inputs from meetings held with the teams and entities involved in project execution.

II. FIDUCIARY CONTEXT OF THE COUNTRY

2.1 **Country procurement system.** Based on document GN-2680-2, approved by the Bank's Board of Executive Directors on 13 May 2014, the Ministry of Economy and Finance signed the "Initial Agreement for Use of the SNCP of Ecuador in IDB-financed Projects" with the National Public Procurement Service of Ecuador (SERCOP) and the Bank. Paragraph 3.2 of the Initial Agreement envisages the National Public Procurement System (SNCP) being applied in seven projects, before gradually being expanded. The Initial Agreement was concluded on 31 December 2018; an evaluation of its functioning is currently underway, and a new agreement for use of the SNCP will subsequently be prepared and signed.

2.2 **Financial management system.** Central government entities use the financial management system (e-SIGEF), which integrates budget, accounting, and cash management processes. Government entities are subject to control and oversight by the Office of the Comptroller General (CGE). In general, Ecuador's country financial management systems have an adequate level of development, although they need to be supplemented to execute Bank-financed projects, in terms of financial reporting with nonaccounting records, and external audits by firms acceptable to the Bank. The government plans to replace e-SIGEF with a new system in 2020.

III. Fiduciary Context of the Executing Agency

3.1 The borrower will be the Government of Ecuador, acting through the Ministry of Economy and Finance. The MTOP will be the executing agency; within its organizational structure there are technical departments that execute, monitor, and evaluate works, in addition to administrative and financial departments, all of which work together. The MTOP will set up a project management team (PMT) through the Office of Loans and International Cooperation, which will coordinate program execution with existing MTOP departments and be responsible for dialogue with the Bank. At a minimum, the PMT will have a coordinator, a financial manager, and a procurement manager. Additionally, it will receive technical support from area undersecretariat 7[1] for monitoring of works components and oversight, so as to ensure exclusive and full-time commitment to program execution. Furthermore, the National Institute of Meteorology and Hydrology (INAMHI) and the National Risk and Emergency Management Service (SNGRE) will take part in disaster risk management activities (under Component 2),[2] and the Ministry of Agriculture and Livestock (MAG) will take part in activities to include women as beneficiaries of road connectivity (Component 2). The MTOP will enter into interagency agreements with the INAMHI, the SNGRE, the Integrated Security System (ECU 911), and the MAG in order to implement these activities.

3.2 The MTOP will manage the program's budget allocation, procurement, and payments using the treasury single account. It will also be responsible for preparing and reporting the program's financial information, managing Bank disbursements, and submitting the required audited and unaudited financial reports.

3.3 The MTOP has been using country procurement systems and registering procurement in the public procurement portal. For financial management, the MTOP uses the national e-SIGEF system, which has internal control units and is subject to external control by the CGE.

IV. Fiduciary Risk Evaluation and Mitigation Actions

4.1 The Bank conducted an Institutional Capacity Assessment System (ICAS) analysis in 2019 that identified the executing agency's main weaknesses, opportunities for improvement, and strengths. The Bank also held a risk workshop that identified the main fiduciary risks, among others. These risks are related to delays in project execution due to the following: (i) delays in prioritizing the investment project and requesting budget allocations; (ii) the current MTOP team does not have experience in managing projects financed by the Bank or other international organizations; and (iii) adequate coordination is lacking between the MTOP central office and area offices for reporting. The following mitigation measures are proposed: (i) strengthen the PMT, specifically the procurement specialist and financial specialist, and provide training on Bank policies and technical assistance;

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[1] Pre-contract processes will be the responsibility of the MTOP central office, and contract management will fall to area undersecretariat 7. Payments will be the responsibility of the MTOP central office, once requested by area undersecretariat 7 and approved by the contract manager and oversight manager.

[2] Technical support will consist of drafting the terms of reference and approving/accepting the outputs, taking into account that the MTOP can carry out this contracting.

(ii) include monitoring responsibilities in the program Operating Regulations in order to fulfill budget requirements and processes for approving payroll and monitoring and evaluation reports; and (iii) ensure that the executing agency has a management team for program execution that includes a financial manager and a procurement manager who can monitor these issues.

V. Considerations for the Special Provisions of Contracts

5.1 No considerations are required for special provisions or exceptions to policies.

VI. Agreements and Requirements for Procurement Execution

6.1 **Procurement execution.** At a minimum, the procurement plan will be updated annually, through the Procurement Plan Execution System (SEPA). The program's main procurement items are indicated in Table 2.

a. **Procurement of works, goods, and nonconsulting services.**[3] These processes will use the Bank's standard bidding documents, applying any of the methods described in the version of the policy set forth in document GN-2349-9, or document GN-2349-15 should the loan contract be signed after 31 December 2019. Table 1 indicates the procurement thresholds.

b. **Selection and contracting of consultants (firms).** These processes will use the Bank's standard requests for proposals, applying any of the methods described in the version of the policy set forth in document GN-2349-9, or document GN-2349-15 should the loan contract be signed after 31 December 2019. Table 1 indicates the selection thresholds.

c. **Selection of individual consultants.** These processes will abide by Section V of the policies for contracting consultants.

d. **Use of the country procurement system.** Use of the SNCP will follow the agreement described in paragraph 2.1.

e. **Retroactive financing.** The Bank may retroactively finance, as a charge against the loan proceeds, up to US$25.64 million (20% of the proposed loan amount), and recognize from the local contribution up to US$3.32 million (20% of the estimated local contribution), provided that requirements substantially similar to those established in the loan contract have been met. Such expenditures will have been incurred on or after the project profile approval date (22 March 2019) and before approval of the loan by the Bank's Board of Executive Directors, but will not include expenditures incurred more than 18 months prior to the loan approval date.

f. **National preference.** In contracts subject to international competitive bidding (ICB), bids to supply goods originating in the borrower's country will benefit from a 15% price preference.[4]

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[3] Policies, document GN-2349-9 (paragraph 1.1): nonconsulting services are treated as goods.

[4] Policies, document GN-2349-9, Appendix II, and the loan contract.

Table 1. Thresholds (US$)

Works			Goods			Consulting services	
ICB	**NCB[5]**	**Shopping[6]**	**ICB**	**NCB**	**Shopping**	**International shortlist[7]**	**National shortlist[8]**
≥3,000,000	<3,000,000 ≥250,000	<250,000	≥250,000	< 250,000 ≥50,000	< 50,000	≥200,000	<200,000

Table 2. Main procurement items

Activity	Selection method	Estimated invitation date	Estimated amount (US$)
Consulting firm services			
Oversight of the works to rehabilitate and build bypass roads for the Bellavista-Zumba-La Balsa road (including road redesigning and leveling, and the road safety audit)	QCBS[9]	Q1-2020	6,200,000
Study to assess the efficiency and applicability of green and hybrid infrastructure	QCBS	Q1-2020	896,000
Feasibility study and final design proposal for mitigation works on the Vilcabamba-Bellavista section of axis road 4	QCBS	Q1-2020	784,000
Financial audit of the program	LCS[10]	Q1-2020	112,000
Individual consulting services			
Midterm and final program evaluation (2 contracts)	International individual consultant selection based on qualifications (IICQ) / National individual consultant selection based on qualifications (NICQ)	Q2-2022 Q2-2024	168,000
Goods and nonconsulting services			
Procurement of equipment (drones, weather stations, communications and computer equipment for analyzing digital alerts, and digital signage)	ICB	Q1-2021	560,000
Works			
Works to rehabilitate and build bypass roads for the Bellavista-Zumba-La Balsa section	ICB	Q1-2020	120,400,000

6.2 **Procurement supervision.** The procurement plan will indicate the supervision method to be used by the Bank. Ex post reviews will be conducted annually as

5 National competitive bidding.

6 Shopping.

7 Policy, document GN-2350-9 or GN-2350-15, paragraphs 2.6 and 2.8.

8 Policy, document GN-2350-9 or GN-2350-15, paragraphs 2.7 and 2.8.

9 Quality- and cost-based selection.

10 Least-cost selection.

indicated in Appendix 1 of the policies, and will include physical inspections where the Bank sees fit.

Table 3. Ex post review thresholds (US$)

Works	Goods	Consulting services	Individual consultants
< 3,000,000	< 250,000	< 200,000	< 50,000

Note: Amounts set on the basis of the executing agency's fiduciary capacity for execution, which can be adjusted in the event of variations.

6.3 **Records and files.** The executing agency and State-owned enterprises (SOEs) will keep all files in a complete and orderly manner, organized independently by process and funding source.

VII. Financial Management Agreements and Requirements

7.1 **Programming and budget.** The Basic Code of Planning and Public Finance (COPYFP) specifies the rules governing budget programming, formulation, approval, execution, control, evaluation, and settlement. These rules are applied to the implementation of IDB-financed programs financed in Ecuador. Both the integrated e-SIGEF system and the new system to be developed by the government instrumentalize and standardize application of these rules throughout national public administration. The MTOP will take steps to incorporate and/or update the investment program as necessary, with a view to securing the respective budget appropriates and other prerequisites for project contracting. The MTOP will provide control and comprehensive monitoring of budget execution through the corresponding systems.

7.2 **Accounting and information systems.** Project accounts will be kept in e-SIGEF or in the new system being developed by the government, once it is up and running. All program commitments and payments will be recorded there, but nonaccounting records will be required to provide detailed information for each component and to generate the program's financial reports, until the new system's reliability and reporting ability is verified.

7.3 **Disbursements and cash flow.** Since 2008, the Government of Ecuador has used the treasury single account mechanism, which unifies cash management for all central government entities. Since the MTOP is included in the national general budget, it also makes all of its payments through the treasury single account.

7.4 The implementation of this mechanism did not eliminate the system of special or specific-purpose accounts, which the Central Bank of Ecuador (BCE) uses to receive multilateral loan financing. The program will maintain an exclusive account with the BCE, into which the loan proceeds will be disbursed. Program payments will be executed through e-SIGEF, or the new system that replace it, through a treasury single account debit.

7.5 The Bank will make loan disbursements in the form of advances of funds according to the project's actual liquidity needs, including payment commitments assumed by the executing agency, according to the financial plan, for a period of no more than 180 days. The Bank may also make direct payments to suppliers or reimburse

other expenditures at the borrower's request. The MTOP will be responsible for managing program disbursements.

7.6 Advances will be accounted for in accordance with document OP-273-12, or later version. At least 80% of the funds received will be accounted for in order to receive a new disbursement.

7.7 Supporting documentation for payments will be reviewed by the Bank and/or the external auditors on an ex post basis, after the funds have been disbursed.

7.8 **Internal control and internal audit.** The Constitution of the Republic of Ecuador puts the CGE in charge of the public sector oversight system. As part of this sector, the executing agency has its own internal audit area that reports directly to the CGE.

7.9 **External control and reports.** Although the CGE has the authority to audit public sector entities, projects are not necessarily included in the annual audit plan. This project will be audited by an external firm of independent auditors acceptable to the Bank (pursuant to document OP-273-12 or later version). The firm will be contracted by the MTOP, as executing agency, for the entire program, including the parts executed with local counterpart funding, based on the terms of reference previously agreed upon with the Bank. The firm may be hired using loan proceeds. The audit firm will be contracted no more than 120 days before the end of the year being audited. It is highly recommended for only one hiring process to be conducted for the entire project, from execution to closure. During execution, audited financial reports will be submitted annually, no later than 120 days after the closing date of each financial year, or, in the case of the final audit, no later than 120 days after the date of the last disbursement. The Bank may also request audited or unaudited financial reports related to the project as it sees fit.

7.10 Although there is no national policy on the public disclosure of audit reports, the Bank's current access to information and disclosure policy requires audited project reports to be published in the Bank's systems.

VIII. SUPERVISION PLAN AND EXECUTION MECHANISM

8.1 **Execution mechanism.** For the program, the MTOP will have a PMT, in accordance with the provisions of section 3.1.

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

PROPOSED RESOLUTION DE-__/19

Regional. Loan ____/OC-__ to the Republic of Ecuador. Border Integration Project – Axis Road 4 – Bellavista-Zumba-La Balza, Zamora-Chinchipe Province

The Board of Executive Directors

RESOLVES:

That the President of the Bank, or such representative as he shall designate, is authorized, in the name and on behalf of the Bank, to enter into such contract or contracts as may be necessary with the Republic of Ecuador, as borrower, for the purpose of granting it a financing to cooperate in the execution of the Border Integration Project – Axis Road 4 – Bellavista-Zumba-La Balza, Zamora-Chinchipe Province. Such financing will be for the amount of up to US$128,200,000 from the resources of the Bank's Ordinary Capital, and will be subject to the Financial Terms and Conditions and the Special Contractual Conditions of the Project Summary of the Loan Proposal.

(Adopted on ___ _____ 2019)

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