

**PROJECT INFORMATION DOCUMENT (PID)
APPRAISAL STAGE**

Report No.: PIDA35702

Project Name	PY Transport Connectivity (P147278)
Region	LATIN AMERICA AND CARIBBEAN
Country	Paraguay
Sector(s)	Rural and Inter-Urban Roads and Highways (85%), General transportation sector (15%)
Theme(s)	Infrastructure services for private sector development (10%), Export development and competitiveness (60%), Injuries and non-communicable diseases (10%), Other urban development (10%), Rural services and infrastructure (10%)
Lending Instrument	Investment Project Financing
Project ID	P147278
Borrower(s)	Ministry of Finance
Implementing Agency	Ministerio de Obras Publicas y Comunicaciones
Environmental Category	B-Partial Assessment
Date PID Prepared/Updated	18-May-2016
Date PID Approved/Disclosed	19-May-2016
Estimated Date of Appraisal Completion	13-May-2016
Estimated Date of Board Approval	21-Jul-2016
Appraisal Review Decision (from Decision Note)	

I. Project Context

Country Context

1. During the past fifteen years, Paraguay's economy witnessed significant improvement of key economic indicators with positive impacts on poverty reduction. Average annual GDP growth exceeded 4.8 percent per year, between 2003 and 2014. Paraguay has witnessed a shift from a traditional and family-based agriculture to one which is modern and based on agribusiness with high-rent products (mainly soy and beef). Exports, driven by the agricultural sector, have experienced sharp increases within the last decade, jumping from 4 percent of annual growth in 1994-2003 to 15 percent in 2004-2013. Agriculture was the second biggest contributor to GDP growth after trade and services, while on the demand side private consumption was the driving factor. According to the Permanent Household Survey, as of 2013 poverty levels had decreased to 22.6 percent of Paraguay's total population (compared to 44 percent in 2003). Out of those under the poverty line, 10.5 percent were in extreme poverty (compared to 21.2 percent in 2003). Furthermore, the bottom 40 benefited from higher economic growth than the top 60. Between 2003

and 2013, incomes of the lower two quintiles grew at an annual rate of 5.9 percent (compared to 3.7 percent of the average person), suggesting that growth was pro-poor. Moreover, between 2003 and 2013, the size of the middle and upper class (defined as those with household income above \$10 a day per person) grew by over 20 percentage points; and by 2013, this group represented half the total population of the country.

2. Stable food prices and better access to jobs have been amongst the most important drivers of poverty reduction, and roads have played a key role in both respects. On one hand, high rates of economic growth opened new labor opportunities for the poor in better paid sectors (such as construction and public administration) and other types of employment (such as wage-agriculture). On the other, a more stable macroeconomic environment slowed the increase in local food prices (in 2012 and 2013, food price inflation fell, leaving the value of basic food items almost unaltered). Poverty reduction in rural areas was driven by both an increase in the number of people employed and higher average earnings for those employed in the off-farm sector primarily and a gradual reallocation of rural labor from less productive small farms to more productive agribusinesses. Indeed, according to a paper prepared by the World Bank (Volatility and Inequality as Constraints to Shared Prosperity: Paraguay Equity Assessment. 2004), about two-thirds of the reduction in poverty was driven by improved labor market outcomes.

3. Despite important progress in promoting rural development, the socio-economic difference between urban and rural areas is still very large. For instance, the poverty headcount in rural areas is twice the one observed in cities (34 percent versus 17 percent). Encouraged by the recent economic achievements, the current administration has placed the eradication of extreme poverty as the paramount objective it is pursuing an ambitious policy agenda, aiming at reducing the extreme poverty headcount of the rural population from nearly 18 percent to 9 percent by 2016. The Government of Paraguay (GOP) developed a National Development Plan (NDP 2014-2030), which spells out its policy agenda to reduce extreme poverty. The NDP envisages a strong public investment effort to alleviate binding infrastructure constraints. In particular, the country's road infrastructure modernization and preservation has been identified as a critical effort to reach the NDP goals, in order to improve physical access to urban agglomerations where jobs and social services are located, and where consumer demand for agricultural and other products is highest.

Sectoral and institutional Context

4. The transport sector is a strategic component of Paraguay's economy given the country's landlocked condition and reliance on exports. Since the late 2000s, cereals and oil crop production, including maize, wheat, rice, soybeans and sunflower, represent 70 percent of the gross value of agriculture production in the country, which represents 30 percent of the total value added to the economy. Livestock is also an important activity, especially for its contribution to exports (meat), representing a gross yearly export value of US\$920 million. During the 2000s, livestock production increased at an annual average rate of 2.3 percent. Similar to neighboring countries (e.g.: Argentina, Uruguay), agriculture production has been directed to exports, and thus, requires logistics infrastructure and services to link the production to the ports. Given its crucial role, it is imperative to prevent the sector from becoming a binding constraint to the country's economic growth. National, departmental and rural road networks need priority attention to improve connectivity of rural populations and production areas with the main consumption centers and export nodes

5. Paraguay's Road Network. With nearly 90 percent of total freight volume movements, the road sector is the dominant mode of transport in the country. Paraguay's road network length is estimated at 100,000 km, of which only 32,208 km are classified and fall under the Ministry of Public Works and Communications (MOPC) administration.

6. Available surface condition surveys carried in 2011 and 2014 over some 4,860 km of paved roads indicate that roads are deteriorating rapidly probably due to insufficient maintenance. As such while in 2011 some 68 percent of the paved network was in good condition (measured through its roughness, $IRI < 3$), in the most recent survey this figure has gone down to 59 percent, with an increased share of roads in fair condition up to 33 percent ($3 < IRI < 5$) and 9 percent that are in poor condition ($IRI > 5$). No indicators are available regarding the condition of the unpaved network; however, given the annual budget allocations to this network (US\$100/km-year) it can be assumed that the network is not receiving adequate maintenance and hence is subject to rapid deterioration too.

7. Road maintenance remains significantly deferred and insufficiently funded. Over the past 6 years, MOPC's annual budget has ranged between US\$250 million and US\$450 million, distributed among investment expenditures (80 percent in average), personnel, administrative costs and others (20 percent in average). This budget corresponds mainly to allocations from the general treasury and, to a lesser degree, to own funds stemming from the collection of tolls. Average annual allocations for new construction and improvements have represented 80 percent, whereas rehabilitation and maintenance activities 20 percent, with the most important share of resources being spent on the paved network. Resources allocated to rehabilitation and maintenance averaged US\$45 million/year on average during the 2003-2014 period, while recent estimates suggest that the average investment should be in the order of US\$95 million/year during the period comprehended between 2014 and 2018, and US\$72 million/year from 2019 to 2023. According to MOPC, funds collected from tolls amount roughly to US\$17 million annually in comparison to annual maintenance needs.

8. In terms of Road Safety, by 2020 Paraguay's fatality rate will be at least 10 times the rate of best practice countries in Europe, representing a serious development challenge. In terms of road safety, Paraguay has a toll of 17.5 deaths per 100,000 inhabitants (2013 data). Annually, about 1,200 lives are lost and approximately 40,000 serious injuries occur due to road traffic crashes. Road fatalities have increased over 200 percent since the year 2000. Injuries resulting from road crashes are the first cause of death for people between 15 to 29 years of age, and the second cause of death for children between 5 and 14 years old. It is estimated that the poor and vulnerable are overrepresented in these figures and tend to suffer disproportionately as road trauma often results in untold misery for low-income groups who may be deprived of the sole income-generating source following a fatality or a road accident. The economic cost of road crashes is estimated at 2 to 4 percent of Paraguay's GDP.

9. Government's road sector strategy. In 2012, the Ministry of Public Works and Communications (MOPC) developed the National Transport Master Plan (2012-2032) directed towards reducing logistic challenges. Based on the results of the Master Plan, the current administration has established a long-term road sector strategy aimed at: (i) completing the key national corridors (bi-oceanic corridor and international corridors); (ii) improving the condition of the existing road assets; (iii) ensuring adequate maintenance to minimize total road user costs and

improve road safety; and (iv) and ensuring the sustainability of the road programs prioritizing investments to assure an alignment with available resources while expanding the tolling network to increase the revenues available.

10. For this project, MOPC prioritized two corridors based on the following criteria: (i) socio-economic importance (agribusiness, interurban mobility), e.g.: Route 3 is an important zone of soybean production and Route 1 has important livestock production; (ii) areas where the poverty level is high, e.g.: San Pedro and CaaguazÃº; (iii) corridors that have not been already included in a financing program with another development partner; (iv) road sections that are a continuity of those included in the previous Bank-financed project; (v) to provide complementarity between this proposed transport project and those that take care of the rural roads network.

11. In response to the road safety concerns, in 2013, the GOP approved the National Traffic and Road Safety Law No. 5016. This law created the National Traffic and Road Safety Agency (ANTSV), whose mission is to prevent and control traffic crashes to reduce mortality and morbidity caused by them, through the coordination, promotion, monitoring and evaluation of road safety public policies across the country.

12. Climate change risks for the country. With their increased frequency in Paraguay due to El NiÃ±o Phenomena, floods have been causing serious damages to road infrastructure, as well as damages to or loss of properties. Adaptation to the adverse impacts of climate change is one of the main priorities for the Government. During the current summer/rainy season, Paraguay has been particularly impacted by heavy rains. Many areas in the Northern region have been rendered inaccessible. The particularly negative impact this season highlights the need to improve the monitoring of road sections for natural disasters and carry out a comprehensive vulnerability assessment of roads to climate change, as well as developing and executing climate resilient measures for the most vulnerable road sections.

13. Rationale and issues to be addressed. Crucial steps for road sector sustainability include moving towards a more efficient road sector that would allow MOPC to:

14. Gradually move towards a steady-state condition of the road network. The road network requires important rehabilitation interventions to upgrade its overall condition and overcome the backlog of deferred maintenance. This implies higher financial requirements than those under a steady-state scenario where future interventions can be anticipated and reasonably taken care of with a given level of resources. Based on past experience, MOPC recently decided to include within the scope of the performance-based contracts, segments of the network that are not in a maintainable condition and thus would require an initial rehabilitation phase, following the Performance-Based Road Rehabilitation and Maintenance Contracts (CREMA) model being implemented in neighboring countries such as Argentina and Brazil. CREMA contracts, with their mix of capital intensive, high value rehabilitation works and labor intensive low cost routine maintenance, encourage large contractors to subcontract the latter work, which helps to promote a healthy development of small local contractors, while the main Contractor retains the overall responsibility.

15. Putting adequate strategies and institutional frameworks in place to guarantee the sustainability of the road sector within a given fiscal framework. Institutional and regulatory frameworks represent a major bottleneck for road network modernization. While there has been

much progress over the last five years, shortcomings remain in the planning, road asset management, implementation and budget execution capacities of MOPC. Expanding the use of performance-based contracts is a step in the right direction to improved asset management practices, but implies securing the necessary funds to rehabilitate segments that have not received interventions in the last years, and maintain the network in the long run.

16. Improving road safety standards. The GOP is currently setting up the organizational structure and operational strategy of the new Road Safety Agency with a clear mandate to coordinate multi-sectoral and multi-jurisdictional actions and polices, empowering it as lead agency in the field of road safety. The new road safety agency will need to build its institutional capacity, financial resources and skills to ensure sound coordination between the various actors, leading strategic investments and interventions, and achieving measurable results, to gain credibility among different levels of government, the private sector, and non-governmental organizations

17. Improving Emergency Response Preparedness. Paraguay suffered the impact of the floods caused by El Niño phenomenon (2015-2016), possibly one of the strongest events since 1950, according to the National Emergency Secretariat (SEN). The Paraguay River reached the highest level in the past 20 years (7.71 m). One of the most affected sectors was transport; the MOPC has been working to identify damage and loss, implementing a reconstruction plan as well as designing a forward-looking. The Bank will work with the MOPC and other national and local government entities in charge of road management and emergency response on better incorporation of vulnerability assessments in planning and programming road programs, designing/improving decision making tools and processes that better address decision-making conditions under uncertainty, and capacity building for the sustainability of these practices.

18. Improving governance and transparency in the allocation and use of existing resources. MOPC manages the largest investment budget among public institutions in the country and is responsible for a large number of contracts. Developing systems that clearly establish what is being achieved through those contracts and at what costs is of utmost relevance. Under the Road Maintenance Project (P082026) several actions were foreseen to support the development and implementation of an Improvement Governance Action Plan (IGAP). These will continue in the proposed project, reinforced by the new legal framework put in place by Law No. 5282/14 of Public Access to Information and Governmental Transparency.

II. Proposed Development Objectives

The Project Development Objectives (PDO) are to: (i) reduce transport connectivity costs and improve road safety along selected paved road sections that pass through targeted Departments; and (ii) improve planning and national road asset management capacity.

III. Project Description

Component Name

Component 1: Road Rehabilitation and Maintenance CREMA Contracts

Comments (optional)

To reduce transport costs in targeted Departments, this component will support the rehabilitation and maintenance of some 320 km of national paved roads (along Routes 1 and 3), through the implementation of two Performance Based Contracts (PBC), under the CREMA modality, evolving and further expanding the country's experience with performance-based contracts supported under

the previous project, including the supervision of works over the contract period. This component will also provide compensation (including cash compensation and other assistance paid for involuntary resettlement) related to implementation of the Project's Resettlement Plan.

Component Name

Component 2: Road Safety

Comments (optional)

To improve road safety along selected paved road sections, this component includes two subcomponents: (i) Sub-component 2.1. The financing of road safety interventions (roundabouts, side guardrails, shoulders, pedestrian walkways, signaling), embedded under the two CREMA contracts, targeting the most vulnerable users along the two corridors. Interventions are prioritized as a result of a road safety audit carried out during project preparation ; (ii) Sub-component 2.2. An additional pilot sub-component will support road safety measures identified and prioritized by eligible municipalities, within project targeted departments, out of a catalogue of pre-defined possible interventions in urban and inter-urban roads, as described in the Project's Operations Manual (OM).

Component Name

Component 3: Road Asset Planning and Management

Comments (optional)

To improve national planning and road asset management capacity, this component will support the consolidation of MOPC's strategic road management methodologies and systems, building on the efforts from the Road Maintenance Project (P082026) to strengthen client's monitoring and evaluation capacity by: (i) completing the road network inventory; (ii) expanding, operating and maintaining the traffic counting system; and (iii) operationalizing the road asset management system.

Component Name

Component 4: Project Management and Implementation Support

Comments (optional)

To ensure the quality and timely attainment of project objectives, this component will provide assistance to MOPC in implementing the project, supporting: (a) associated costs related to project management functions of the Project Executing Unit (UEP), including monitoring and evaluation activities as well as additional support, if necessary; (b) project financing annual audits; (c) project's citizen engagement web-based system VEA (Information Access Window), implemented by the Directorate of Transparency and Citizen Participation; and (d) environment and social management, including safeguard compliance supervision activities. This component will also support the active promotion of indigenous communities' social inclusion by addressing their specific needs, differentiated by gender.

IV. Financing (in USD Million)

Total Project Cost:	100.00	Total Bank Financing:	100.00
Financing Gap:	0.00		
For Loans/Credits/Others			Amount
Borrower			0.00
International Bank for Reconstruction and Development			100.00
Total			100.00

V. Implementation

A. Institutional and Implementation Arrangements

19. Executing Agencies. The Ministry of Finance will be the representative of the Republic of Paraguay (the Borrower). The project's executing agency will be the Ministry of Public Works and Communications (MOPC) through the Roads Directorate (DV).

20. Project Management. Implementation arrangements for the proposed loan will be similar to those under the Road Maintenance Project (P082026). The project will be managed by a Project Executing Unit (UEP) within DV, which was created in 2004 for the preparation and implementation of the previous loans, complemented by line staff of DV.

21. For the particular purpose of the pilot road safety sub-component 2.2, MOPC will remain the executing agency accountable for results, same as for all other project components, but will work in close coordination with the recently created ANTSV and the beneficiary municipalities.

22. While UEP will be the main Bank interlocutor, UEP will coordinate project implementation with other MOPC directorates/divisions involved, including: (i) the PBC Unit (Currently known as Unidad GMANs) within the Roads Directorate, which will implement component 1 (Road Rehabilitation and Maintenance CREMA Contracts) and sub-component 2.1 (Road Safety interventions embedded under the CREMA Contracts); (ii) the Road Planning Directorate, responsible for the implementation of component 3 (Road Asset Planning and Management); (iii) the Road Safety Division within the Road Planning Directorate, which will implement sub-component 2.2 in coordination with the ANTSV (which will provide technical support to the municipalities in the preparation of the urban road safety plans); (iv) the Social and Environmental Management Directorate (DGSA), which will be accountable for assessing, developing and supervising environmental and social plans and programs; (v) the Operational Procurement Unit - UOC; and (vi) Public Credit Directorate within the Vice-Ministry of Administration and Finance.

B. Results Monitoring and Evaluation

23. The monitoring and evaluation (M&E) system is designed to assess whether or not the project is being implemented in line with the proposed objectives and its achievement of expected results. Project progress reports will be prepared by the UEP, with inputs from all MOPC directorates/divisions involved, on a semi-annual basis and submitted to the Bank for review and comments within 45 days from the end of the reporting period. These reports shall include among others: (i) an update on the results achieved based on the indicators and target values established in the results framework; (ii) the activities carried out throughout the reporting period under each component; (iii) key issues/constraints or risks affecting project implementation that require attention with corresponding proposed measures to address them; (iv) disbursement calendar for the next six months; and (v) progress achieved in the implementation of the environmental and social safeguards plans, including the project's Resettlement Action Plan (RAP) for Route 1 and Route 3. UEP will be responsible for Project data collection and compilation as well as the overall project monitoring and evaluation assessment. In addition, an in-depth project implementation progress assessment will be carried out at the midterm review; both UEP will prepare a report and make a formal presentation of the progress made during the project life up to that point. Any additional costs incurred under the M&E framework will be financed by the project.

C. Sustainability

24. The project will pursue sustainability through: (i) the implementation of cost-effective infrastructure solutions to maintain the road network in a steady-state condition where annual needs become manageable; (ii) initiatives to institutionalize a culture of road safety in targeted Departments; and (iii) the successful adoption of strategic planning tools and better road management practices that link road management activities to budget allocation. The expansion of long-term performance based contracts will help to secure the required funds and reduce future annual costs.

25. In addition, the project will promote road network sustainability by assessing climate change vulnerability and providing technical assistance for the implementation of appropriate mitigation and adaptation measures. The Bank has an additional US\$200 thousand in grant with the purpose of providing technical assistance to enhance tools to support climate vulnerability analysis and investment plans to provide more robustness and flexibility of the road network, and propose mitigation and adaptation measures. The engineering designs under preparation consider specific measures for areas vulnerable to climate risks, in particular flooding.

VI. Safeguard Policies (including public consultation)

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	x	
Natural Habitats OP/BP 4.04		x
Forests OP/BP 4.36		x
Pest Management OP 4.09		x
Physical Cultural Resources OP/BP 4.11	x	
Indigenous Peoples OP/BP 4.10	x	
Involuntary Resettlement OP/BP 4.12	x	
Safety of Dams OP/BP 4.37		x
Projects on International Waterways OP/BP 7.50		x
Projects in Disputed Areas OP/BP 7.60		x

Comments (optional)

VII. Contact point

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