The World Bank
Serbia Railway Sector Modernization (P170868)

Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 12-Nov-2020 | Report No: PIDA28671
BASIC INFORMATION

A. Basic Project Data

<table>
<thead>
<tr>
<th>Country</th>
<th>Project ID</th>
<th>Project Name</th>
<th>Parent Project ID (if any)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serbia</td>
<td>P170868</td>
<td>Serbia Railway Sector Modernization</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Region</th>
<th>Estimated Appraisal Date</th>
<th>Estimated Board Date</th>
<th>Practice Area (Lead)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EUROPE AND CENTRAL ASIA</td>
<td>12-Nov-2020</td>
<td>28-Jan-2021</td>
<td>Transport</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Financing Instrument</th>
<th>Borrower(s)</th>
<th>Implementing Agency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investment Project Financing</td>
<td>Republic of Serbia</td>
<td>Ministry of Construction, Infrastructure, and Transport, Serbia Railways Infrastructure</td>
</tr>
</tbody>
</table>

Proposed Development Objective(s)

MPA Program Development Objective: To improve the efficiency and safety of Serbia’s rail network and enhance the environmental sustainability of Serbia’s transport system.

Phase 1 Project Development Objective: To enhance the efficiency and safety of existing railway assets and improve governance and institutional capacity of the railway sector.

Components

- Infrastructure Investments and Asset Management
- Institutional Strengthening and Project Management
- Railway Modernization Enablers

PROJECT FINANCING DATA (US$, Millions)

**SUMMARY**

| Total Project Cost                  | 125.00 |
| Total Financing                     | 125.00 |
| of which IBRD/IDA                   | 125.00 |
| Financing Gap                       | 0.00   |

**DETAILS**
B. Introduction and Context

Country Context

1. The Republic of Serbia is located in the central part of the Balkan Peninsula, on an increasingly important transport route linking Europe and Asia. Serbia’s international road, railway, and inland waterway networks are connected to the broader Western and Central European transport corridors, as well as to intercontinental routes linking Central and Southeastern Europe with the Middle East, Asia and Africa. Serbia’s geographic position opens up significant opportunities to deepen regional trade and economic integration.

2. Serbia is an upper middle-income country, and, with a gross domestic product (GDP) in 2019 of US$ 52.7 billion, is one of the main economies in the Western Balkans. In 2019, Serbian exports grew by 8.8 percent and the economy grew by a solid 4.2 percent, with the service sector as the main driver of growth. According to Labor Force Survey data, in 2019 unemployment fell to an estimated 10.4 percent, and employment reached a record high of 49 percent. Average wages also went up by 10.6 percent in nominal terms. Serbia’s fiscal consolidation efforts resulted in surpluses in 2017 and 2018 and a strong fiscal position in 2019, with a small deficit of 0.2 percent of GDP. Despite this improved scenario, Serbia needs further sustained and accelerated growth to catch up with comparators such as other smaller transition economies of Europe. Serbia started negotiations for European Union (EU) accession in 2014, and converging to EU levels of income remains a key objective. A key challenge remains that state-owned enterprises (SOEs) dominate many sectors of the economy, drawing substantial fiscal subsidies and diverting resources from more productive uses.

3. The Serbian economy is experiencing a recession due to the COVID-19 pandemic, and GDP is expected to drop by 3 percent in 2020. The broad and strict lockdown measures in response to the pandemic have led to a significant reduction in economic activity. The 2020 fiscal deficit is expected to reach 7.3 percent of GDP (compared to a pre-crisis projection of 0.5 percent) due to a decline in revenues and spending for urgent goods and services. Public debt is projected to reach around 64 percent of GDP by year-end and poverty (20.8 percent in 2017) is expected to increase by as much as 2 to 4 percentage points in 2020, wiping out the gains of the last
four years. The negative impact of the pandemic is affecting manufacturing but is most pronounced in the services sectors, in particular transport and tourism. By August 19, 2020 about 30,048 cases had been confirmed with 684 fatalities. Strict restrictions on mobility, commerce, and public gatherings aimed at containing the pandemic have had significant adverse impacts on economic activity. As a result, the Serbian economy is in recession. The government and the National Bank of Serbia have introduced several measures to mitigate the economic impact of the pandemic, including a massive fiscal stimulus package of about 11 percent of GDP in May 2020. The fiscal package includes direct payments to businesses and individuals, soft loans, and guarantees. Additional measures, including wage subsidies (of 2/3 of minimum wage) to all employees and further deferral of social contributions and labor taxes, were announced in August. The impact of the COVID-19 global pandemic reveals the need to further build resilience against a range of vulnerabilities to persons and institutions in Serbia. A longer-lasting pandemic would result in a deeper recession and more pronounced financial pressures, both fiscal and external.

4. **Serbia faces significant environmental challenges and climate-related risks.** The country is prone to natural disasters such as floods and droughts, which can cause significant damage to infrastructure and livelihoods, especially among vulnerable groups. Climate change may intensify the frequency and scale of natural disasters. In 2014, a low-pressure cyclone hit Serbia, bringing the heaviest rain in the 120 years of record-keeping. The event affected over 1.6 million people in Serbia and caused several fatalities, mostly due to high levels of fast flowing rivers. The damage for Serbia was estimated at EUR 1.55 billion. Moreover, rising temperatures are of increasing concern. Temperatures in August over the last several years were above 42°C. Meanwhile, low efficiencies in energy, transport, water, waste management, and agriculture are producing a high carbon footprint, significant losses of extracted water, and elevated levels of air pollution in major cities. Addressing environmental challenges together with climate change is essential to sustain progress and ensure long-term economic development.
Sectoral and Institutional Context

5. The Ministry of Construction, Transport and Infrastructure (MCTI) has estimated that, due to the COVID-19 pandemic, revenue losses in the transport sector could reach EUR 772 million in 2020. Lockdown measures have resulted in sharp reductions in demand for all forms of transport, which has heavily strained sector finances. In the first lockdown months of the pandemic, public transport was stopped, and it has not recovered to its previous levels since the stoppage was eased. Demand for public transport has declined despite measures to increase the cleaning of vehicles, stations, and equipment. For Serbia’s rail sector, the impact of the pandemic has been significant, as the Government of Serbia (GoS) took measures to reduce transport movements in the interest of public health. Cargo volumes dropped by around 30 percent during the first three months of the pandemic. Despite these difficulties, the GoS is aware that the railways will be essential during the recovery period for access to jobs, health, education and other basic services, the movement of essential goods, and “building back greener.”

6. Serbia’s vision for the transport sector is built around Serbia’s ambitions for EU accession and meeting the standards to achieve this. This includes connecting communities in a safe and reliable manner while protecting the environment by reducing air pollution, noise and GHG emissions through more diverse and “green” means of transport. A key part of the transport strategy is connecting to the EU Trans-European Transport Network (TEN-T) network and all that this entails in terms of physical infrastructure, standards, participation in EU transport markets, cross border trade, and improved inter-modal transport. The vision also includes further deregulation and liberalization of transport markets in compliance with EU requirements. This will expand markets, but domestic transport providers need to improve their competitiveness and market orientation.

7. The long-term vision of the GoS, the Transport Community Secretariat for the Western Balkans, and the EU lead to a modal shift to rail, to reduce emissions, promote regional integration, and achieve more sustainable economic development. A joint declaration of transport ministers of the Western Balkans in June 2020 to adopt a regional rail transport strategy expressed concern that the lack of competitive rail transport services is a major impediment to achieving sustainable transport of passengers and goods and enhancing connectivity within and throughout the region. From a strategic perspective, based on Serbia’s current negotiations towards accession to the EU, Serbia will need to undertake measures that contribute towards the objectives of the EU’s “Green Deal” and climate neutrality. In the context of transport, this means a 90 percent reduction in transport emissions, which implies a boost in multimodal transport to improve the efficiency of the transport system.

8. To achieve such a modal transition, the GoS is working on six strategic initiatives. These are: (i) open the rail market at the regional level; (ii) implement EU rail freight corridors; (iii) enable widespread use of the intelligent transport systems for rail; (iv) develop and properly maintain corridors meeting TEN-T requirements; (v) improve rail border crossing operations; and (vi) increase level of service on railways. The proposed Program will cover four out of these five areas, except (v) which will be addressed by the Western Balkans Trade and Transport Facilitation Project (WBTTFP). To implement these strategies, the “Serbia 2025” investment plan announced by the country’s President in December 2019 called for EUR 3.3 billion in new investments in rail. The WB program is aligned with these efforts.

9. Serbia’s rail network, covering 3,735 km, is a major asset with the potential to play a strategic role in the nation’s development. At present, Serbia’s main trading partners are the Western Balkans, Germany, and Russia. Serbia’s key exports (automobiles and auto components, electrical motors and wire, and agricultural products) as well as its main imports (pharmaceuticals, vehicle parts for assembly, and crude and refined petroleum) lend themselves to transport
by rail as the mode of choice. Railways are more cost-efficient than road transport for products that are in bulk, heavy, and moved over relatively long distances. For such goods, rail transport is also more energy- and emissions-efficient per ton and saves on road maintenance.\(^1\) With a modern rail system, Serbia can capitalize on its favorable location as a hub for the main east-west and north-south corridors to capture both regional and longer-distance trade opportunities.

10. In 2015, the GoS initiated sector reforms to reduce the large fiscal burden of railway subsidies and to start bringing its system in line with the standards of the European Union (EU). The 2008–2015 transport strategy for railway, road, inland waterway, air, and intermodal transport and the 2011 and 2013 Railway Law and Railway Safety Interoperability Laws all set targets in line with the EU legal and regulatory framework. Before its reorganization in 2015, Zeleznice Srbije (Serbian Railways) had been the largest recipient of direct budget subsidies (0.3 percent of GDP in 2015), and its debt service for activated guarantees (0.13 percent of GDP in 2014) was among the largest for SOEs. Although direct fiscal support to the rail sector remained constant between 2015 and 2018, total subsidies have been considerably reduced as a result of cutting losses of the companies by over 90 percent, and removing the cargo company from the budgetary support.

11. The reforms already undertaken by the GoS—a number of them with prior World Bank support—have helped to introduce an EU-compliant legal framework to enable clarity of institutional roles and drive performance improvements. In 2015, the GoS Railway Reform Steering Committee was established, and Serbian Railways was unbundled into three operating companies (passenger, freight, and infrastructure) plus a transitional company. The Steering Committee adopted a Railway Reform Plan (2016-2020), informed by a 2014 World Bank (WB) Railway Policy Note and an EU-funded consultancy report. Underlying the Reform Plan’s actions is the need to change the business culture in the sector to enable and empower the new railway companies to operate commercially. Other actions have included market opening, reduction of network length by 21 percent by closing unneeded segments, retrenchment of the sector workforce by 37 percent, and introduction of contractual arrangements between the companies and the Government.\(^2\) Large liabilities have been settled and restructuring of commercial debt was completed, with debt allocated to the cargo and passenger operating companies and debt restructuring plans either agreed with or under consideration by the creditors. Since 2016, labor productivity has increased by more than 15 percent. Total subsidies to the sector were reduced by 33 percent between 2015 to 2018, from RSD 16.7 million to RSD 11.25 million. The two main railway operators completed several successful rounds of disposal of surplus assets, generating a total of EUR 6.0 million in savings (cargo EUR 4.33 million and passenger EUR 1.68 million).

12. While these reforms have been significant, Serbia's railways require further transformational change in infrastructure and institutional capacity for both cargo and passenger services. While demand for rail freight is stable, and regional freight movements are improving, passenger transport has declined by over 60 percent between 2005 and 2017. The stagnant performance is in part due to under-investment in the railways and the resultant decline in average track speeds. Additional measures are needed in the sector to (i) develop a stronger commercial orientation and ability to attract new business; (ii) make investments in multi-modality both for freight and

---

\(^1\) Rail Transport and Environment: Facts and Figures, Community of European Railway and Infrastructure Companies (CER) and International Railway Association (UIC), 2015.

\(^2\) Public Service Obligation (‘PSO’) contract between the GoS and SV and Multi Annual Infrastructure Contract (‘MAIC’) between the GoS and the national infrastructure manager, Infrastruktura Zeleznice Srbije (IZS).
passengers and stronger linkages with urban transport systems; (iii) improve the management of existing assets to maximize returns on capital; and (iv) modernize the IT and safety systems of the railway.

13. Following the unbundling of Serbia Railways into separate companies, the key stakeholders in the railway sector in Serbia are now the following: MCTI is responsible for policy direction and funding of railways. The Railways Directorate (RD) is the market regulator and oversees the safety and interoperability of rail transport. Serbian Railways Infrastructure (IZS) is an SOE for infrastructure management, responsible for construction, maintenance, and operation of the railway network, supporting itself mainly through fees. Serbia Voz (SV) is an SOE responsible for organization and delivery of rail passenger transport services. Serbia Cargo (SC) is an SOE responsible for organization and delivery of rail freight services. Serbian Railways AD is a temporary organization with the remit of generating revenue from various non-core railway assets and settling the court cases involving the former vertically integrated railway company. Finally, there are nine active private rail cargo operators certified by the Railways Directorate.

14. The GoS has embraced an ambitious investment program aimed at significantly improving railway infrastructure quality over the next 5-10 years. Since 2015, the GoS has increased rail investments, not by shifting resources from roads to rails, but by mobilizing new financing sources. These initiatives to mobilize new financing have not been accompanied by a new generation of policy and institutional reforms. The current National Program for development of railway infrastructure for the period 2017-2027 (updated in 2019)4 consists of US$ 432 million in implemented projects, US$ 954 million in ongoing projects, US$ 864 million of projects in preparation, and US$ 2.7 billion in the planning stage. Adoption of the National Program was a requirement per Article 46 of the Law on Railways.5 It defines priorities for construction, renewal, reconstruction, and maintenance of railway infrastructure. In regard to modernization, the goal is to meet EU capacity requirements and quality standards relevant to the TEN-T network6 (in terms of track length and layouts, signaling, and telecommunication systems) and reinforce Serbian capacities in the context of the EU pre-accession process). Loans obtained from the Russian Railways and the Chinese EXIM Bank have accounted for 67 percent of railway infrastructure financing since 2015. Other financiers of railway infrastructure in Serbia are the European Bank for Reconstruction and Development (EBRD) and the European Investment Bank (EIB), with 19 percent of committed financing, and EU grants, covering 9 percent. It is worth noting also that since 2012, Serbia also obtained grant co-financing (50 percent) through the EU Connectivity Agenda for the Western Balkans for three railway projects. However, implementation of capital investment projects has been slow, mainly due to lack of planning documents and designs and low absorptive capacity to manage projects.

15. France is at present not among financiers of Serbia’s railway modernization program but intends to collaborate with the World Bank in the proposed Bank-supported Program in line with its climate goals. Through its development agency, Agence Française de Développement (AFD), France is proposing to contribute at least Euro 50 million in co-finance to this phase of the operation. This is advantageous to Serbia and the World Bank in several

---

3 Most rail cargo operators provide specialized services (e.g., chemical or mining) focused on particular traffic segments. Many of these operators were established by previous rail customers that sought to obtain higher quality service or lower transport rates.
5 Official Gazette of the Republic of Serbia, no 45/13 and 91/15.
6 Trans-European Transport Network (TEN-T) is a planned set of road, rail, air and water transport networks in the European Union, including multimodal transport. Relevant legal acts define transport corridors, main seaports, river ports and airports together with principal EU border crossings in order to improve internal connectivity and connections to neighboring countries, as well as to set the foundation for the enlargement of the Union to the Western Balkans countries.
ways including financial burden-sharing and furthering the agenda of aligning to EU standards especially in transport efficiency and climate goals. Additionally, France is involved in discussions with Serbia to support light rail for Belgrade and has the technical capacity to support both institutional and technological innovations, especially in climate and resilience frontiers. AFD has been involved in critical aspects of the design of the operation.

16. **The GoS has requested the World Bank’s support to complement its railway infrastructure investment program with essential institutional and structural modernization and strengthening.** Although the proposed World Bank financing envelope of US$ 400 million is only about eight percent of the total, the Bank’s engagement would be crucial to strengthen the strategic focus, help put in place major additional pieces of the policy, institutional and modernization framework, and sharpen oversight and coordination. The key elements of the Bank’s support would be: (i) strengthening sector regulation while giving companies clear and manageable contractual arrangements; (ii) improving infrastructure and its management through a modern Asset Management System (AMS); (iii) giving railway sector companies incentives to maximize their own corporate efficiencies and achieve their commercial objectives; (iv) enhancing the reliability and safety of railway services through modern technology, up to date safety systems, energy efficiency measures, and resilience considerations; and (v) increasing rail modal share by addressing last mile connectivity, levels of service, urban integration, multimodal logistic centers, and concepts of integrated territorial development. Figure 1 schematically illustrates the route being followed by the Serbian rail sector on its journey to its ultimate goal, a safe, sustainable, commercially efficient, and effective railway system.

17. **The focus of the proposed Bank-supported Program is on key structural and sectoral elements that will create an enabling environment for the substantial infrastructure investment supported by other development partners to monetarize and achieve modal shift.** This will be done through a stepwise program that begins with modest but critical infrastructure investments, asset management (e.g., 31 km of track rehabilitation, the construction of the Belgrade station, and level crossings reconstruction), and institutional strengthening to continue the 2015 reforms, plus forward-looking knowledge activities. The first phase will lay a foundation to enable the Serbian rail sector to extract more value for money—in terms of efficiency and sustainability—from the considerable physical investments being made across the rail system. For example, the asset management system would accrue maintenance and rehabilitations savings of 5 to 10 percent once all the infrastructure in the sector is built. The MPA is fully aligned with the vision of creating an enhanced regional rail system in line with EU standards.

18. **Infrastructure modernization is essential to address various cross-cutting performance issues like safety, resilience, inclusion, and digitalization.** Decades of low and non-strategic investments, outdated management structures and practices, and neglect of maintenance have led to serious deterioration of the network infrastructure, obsolescence of the rolling stock, and low service quality. As one example, an average of 39 percent of scheduled passenger and 37 percent of scheduled freight trains were cancelled during the period 2016-2018. The current design state of the railway lines enables operation of rolling stock from 12 t/axle to 22.5 t/axle, with the latter maximum load capacity possible on only 50 percent of the network, which is an obstacle to growth of rail freight traffic. Services are greatly hampered by the current severe regime of continuous speed restrictions across the network. The average speed is low at 38 km/h, and the network has many slow and dangerous spots. As recently as 2017, railways in Serbia had a derailment rate of 9.14 derailments per million train kilometers, compared to 1.5 in Bulgaria and 0.1 in Croatia.

19. **Freight rail transport is starting to show positive results, but much more needs to be done.** Recent reforms have attracted back some of the freight traffic lost between 2004 and 2014. However, much of the freight that could move
by railways still goes by road.7 Table 3 shows that the rail market share between Serbia and its neighbors for bulk traffic is quite low in general and should be reversed to achieve higher shares in the railways. Interestingly, the rail market share is relatively higher for movements with Hungary and Romania, but quite low for movements with Croatia. Given the comparable distances, this is a sign that improvement of the rail lines and services to Croatia can increase the market share of railways in the movement of bulk traffic. Proper measures will help tilt the modal share back in the railways favor. One of the key indicator targets for in this MPA would imply an additional 230 million ton-kilometers per year in bulk freight movements on the rail system.

20. **Serbia’s rail freight intermodal market is undeveloped but has the potential to add an important traffic base to the railway system.** In general, other European railways have been able to achieve substantial growth of intermodal traffic, even while their overall freight market share remained constant. Total rail freight (million ton-kilometers) in the EU grew by only 1 percent from 2005 to 2015, but intermodal rail freight grew by 28 percent during the same period. Improving rail infrastructure and modernizing rail cargo operations would introduce a service that is being sought by producers in the region. At present, it is unclear whether GoS will privatize SC or keep it as an SOE and modernize it. Regardless, there are basic measures that must be implemented to increase SC’s autonomy and efficiency. These include adoption of a more customer-led approach, better cost recovery, further compliance with EU standards, acquisition of new IT systems for day-to-day operations, and improvement of human capital, which are all included in this MPA. Proposed infrastructure investments will support rail intermodal development for the Western Balkans 6, as Serbia’s rail system is at the crossroads of many strategic corridors in Southeast Europe. Intermodal markets and bulk flows in the region show that the broad corridors of interest are centered in Serbia and are well aligned with established continental corridors that cross the region.

21. **The prospects for passenger rail services are mixed and face considerable challenges.** SV has improved its financial accounting practices and has entered into a Public Service Obligation (PSO) contract whereby the subsidy that it receives is conditioned on certain performance indicators. This helps to ensure that only valuable passenger rail services are maintained. Still, passengers per km declined by over 60 percent between 2005 and 2017, and the volume of passenger services was lower in 2018 (Table 1). Passenger services currently do not have an efficient multimodal interface, and stations, which have not been renovated for decades, do not play an important role in the transport environment, even those located in the city centers. This means that design and operation of the stations do not take into account the mobility patterns and needs of female population. Also, while newly procured wagons are designed for people with disabilities, train stations are not adjusted for people with special needs or vulnerabilities. Even so, provided that SV implements measures to become more market oriented and complementary infrastructure investments are made, rail passenger services will remain a key element of the Serbian transport system, as they are in Europe generally. The long-term objective for passenger rail services should be to recover some of the traffic lost and converge with EU rail modal share averages of around 7 percent. The target of this MPA is to increase passenger rail modal share from 3.5 to 4.63 percent. Serving all segments of the population by understanding their mobility needs and patterns, and responding by designing services appropriately will be key for SV to achieve this goal.

22. **Technology will be an important element going forward, and new infrastructure will need to be compatible with emerging intelligent railway systems.** Automation is the architecture that links railway components together for a

---

7 For example, Serbia currently exports about 2.7 million tons of corn and 0.5 million tons of wheat to Romania. However, railway operational statistics from MCTI do not show significant rail freight movements of these two commodities, and it is unlikely that they are moving on inland waterways (Danube and Sava rivers).
standardized and efficient flow of traffic. The railway sector in Serbia is well positioned to start a formal initiative for technology deployment to achieve significant transportation, safety, and environmental benefits, but this will require strong capacity building within the companies and early considerations of general data protection regulation (GDPR) and cybersecurity. Such an initiative can be supported by key local drivers such as the country’s strong IT sector and the presence of a clear technology framework driven by EU standards. Furthermore, the country transposed the EU GDPR that is a good start to incorporate personal data protection consideration at the early stage of the ISR implementation.

23. **Railway safety is a serious challenge in Serbia.** As mentioned above, Serbia’s derailment rate is far above peer countries. Derailments are the leading cause of accidents on the system (39 percent), followed by level crossings (22 percent). In 2017, the level crossing accident rate in Serbia was 5 per million train-km, compared with only 1.14 in Bulgaria, 0.5 in Croatia, and 0.09 in Germany (Figure 2). If this problem is not addressed now, it is likely that more accidents and fatalities will occur once train speeds increase. Implementation of Asset Management Systems (AMS) and Safety Management Systems (SMS) coupled with cost-effective technologies will bring safety in the Serbian rail sector to a level comparable with regional standards. Investments in level crossings in the first phase of the MPA are expected to reduce accidents by 25 percent, with more improvements to be expected as subsequent phases are implemented.

24. The GoS will reactivate the Steering Committee as a platform to promote change that requires political consensus and to provide strategic guidance for the modernization of the sector and coordinate sectorial activities among the various GoS institutions and development partners. The reactivation of the Steering Committee is important because multilateral dialogue in the sector has intensified in recent months. As part of this dialogue, the World Bank is working with the mission of the EU in Serbia and the Agence Francaise de Développement (AFD) on aligning future investments and initiatives the sector. The World Bank is also coordinating with the other IFIs like EBRD that is active in passenger railway sector and EIB that is planning loans for large infrastructure renewals. In the past, the Steering Committee was led by the Transport Minister and included higher level representatives from other ministries and IFIs.

**C. Proposed Development Objective(s)**

**Development Objective(s) (From PAD)**

**MPA Program Development Objective:** To improve the efficiency and safety of Serbia’s rail network and enhance the environmental sustainability of Serbia’s transport system.

**Phase 1 Project Development Objective:** To enhance the efficiency and safety of existing railway assets and improve governance and institutional capacity of the railway sector.

**Key Results**

The MPA’s key PrDO outcome indicators are:

- Efficiency: Increase network utilization by 5 percent
- **Safety**: Reduce fatality rates on the rail network by 23 percent (fatalities per train-kilometers); Safety risk assessment operationalized and implemented
- **Environmental sustainability**: Increase national cargo rail market share by 30 percent (ton-km) and increase the national passenger rail market share by 30 percent (passenger-km).^8
- **Climate co-benefits**: Contingency plan under Safety Management System is operationalized

Intermediate Outcomes:
- Increased intermodality, as measured by freight containers and passengers connecting to or from rail with a different mode of transport
- Improved capital investment efficiency of IZS, as measured by numbers of km rehabilitated and built per year
- Improved maintenance of the rail infrastructure, as measured by share of track network operating at design speeds (design speed km/total network km)
- More private operators and private Infrastructure Maintenance Contractors (IMCs), and greater volume of private investment in the sector
- Increase in number of female researchers in the rail industry as measured by number of PhD scholarships provided to females in rail-related subjects

The MPA’s key output indicators are:
- Kilometers of track rehabilitated
- Other railway infrastructure improved (stations, rail-bus connections, intermodal terminals, etc.)
- Level crossings upgraded
- SMS implemented in IZS, Serbia Cargo and Serbia Voz
- Asset management system implemented
- Options for new legal framework available for adoption by the Railways Directorate (RD)
- New data system implemented by the Railway Directorate
- New ownership structures for Serbia Cargo and Serbia Voz implemented
- Human resources strategies implemented in the companies to enhance their capacities and gender balance
- Number of passenger beneficiaries, disaggregated by gender
- Percentage of beneficiaries—disaggregated by gender—who report that the project has established effective engagement processes (e.g. through the participatory needs assessments, roundtables, citizen report cards, and survey)

---

^8 The share of total traffic moved by rail (modal share) is a proxy for the environmental sustainability of the transport system, as rail transport is more energy- and emissions-efficient per ton.
D. Project Description

25. **Phase 1** will focus on upgrading existing rail infrastructure and establishing the enabling environment for further corporatization of the railway companies and operationalization of sector reforms. This will be achieved through implementation of the following three components:

1. Component 1. Infrastructure Investments and Asset Management (US$ 106.1)
2. Component 2. Institutional Strengthening and Project Management (US$ 9.5)
3. Component 3. Railway Modernization Enablers (US$ 9.4)

**Component 1: Infrastructure Investments and Asset Management**

26. **This component focuses on improving the quality and safety of railway infrastructure and enhancing rail asset management practices.** The quality of the railway network will be improved through targeted renewal interventions and preparation of technical documentation for the next phases of the Program. Railway safety will be improved through track renewal and also through upgrading of railway crossings throughout Serbia. To ensure the long-term sustainability of the GoS’s ambitious railway investment plan and to provide for systematic, transparent, and objective planning of investments in infrastructure maintenance and rehabilitation, the component will finance the introduction Asset Management Systems (including the capability to carry out LCC analyses). Accordingly, the component will be implemented through the following subcomponents:

   (i) **Subcomponent 1.1 Reliable and Safe Railway Infrastructure (US$ 96.8):** This subcomponent will support IZS in carrying out a program of track renewal and safety interventions to restore service performance. The specific sections and components in each track segment have been selected from the National Program based on strategic importance, LCC analysis, and readiness for implementation. The investments will include renewal of critically important lines and tunnels in Belgrade city center, construction of the second stage of the main railway station in Belgrade center, installation of four wayside measurement stations, improvement of about 150 railway level crossings around the country, and establishment of the Level Crossing Safety Improvement Program.

   (ii) **Subcomponent 1.2 Technical Documentation (US$ 4.1 million):** This subcomponent will support preparatory technical work to ensure the readiness of the infrastructure investment pipeline for subsequent phases of the MPA, and, as such, increase the absorption capacity of IZS. Activities to be financed will include feasibility studies and/or preliminary designs, detailed designs, environmental management plans and environmental impact assessments, and resettlement plans if needed.

   (iii) **Subcomponent 1.3 Asset Management (US$ 5.2 million):** This subcomponent will support the adoption of specialized Railway Infrastructure Asset Management System encompassing the functionalities of the LCC analysis, cost-benefit, Failure Mode Effects and Criticality Analysis (FMECA) and Reliability, Availability, Maintainability, and Safety (RAMS) as IZS’s standard tool for planning and decision making for financing activities. Additionally, this subcomponent will include technical assistance to develop Railway Infrastructure Implementation Plans aiming at rationalizing the scheduling of railway improvements in such a way as to minimize delays and uncertainties for cargo and passenger operations as works are implemented.
Component 2: Institutional Strengthening and Project Management (US$ 9.5 million)

27. The component focuses on strengthening rail policies and institutions to deepen and sustain recent reforms. The activities will support GoS’s effort in continuing the sectoral reforms through institutional capacity building and the introduction of modern management systems and approaches, especially those that will promote more efficient, transparent, customer-responsive and commercially oriented ways of operating. To this end, the component will finance the following subcomponents:

(i) **Subcomponent 2.1 Sectoral Governance (US$ 4 million):** This subcomponent will provide a mix of technical assistance and investments to strengthen the governance of the key railway agencies and improve their efficiency and results. Special focus will be on empowering RD to fulfill its role as a main driver of railway sector modernization. Furthermore, this subcomponent will provide support to IZS, SC and SV to adopt commercially oriented, independent management and modernize their outdated internal structures and systems through wider adoption of ICT technologies and introduction of business support systems, asset management systems, financial reporting systems, and document management systems. The subcomponent will assist in completing the network of contractual relationships between railway companies (“joined-up environment”) by developing and implementing a “statement of requirements”.  

(ii) **Subcomponent 2.2 Human Capital (US$ 2.8 million):** This subcomponent will finance a mix of technical assistance and capacity building activities to establish mechanisms and frameworks for long term development of human resources and knowledge sharing in the sector. The goal is to develop capacities and a pipeline of skilled staff in IZS, SC, and SV to increase the rate of investments, modernize operations, improve asset management, operate services that appeal to the market, and increase IT adoption, and to raise a profile of rail profession in academia by creating a first female cohort of researchers teaching subjects related to rail in the country. To ensure sustainability and reach of human capital development, the interventions will extend beyond internal measures with a focus on the three key areas: (i) development and implementation of robust HR systems, HR strategies, and knowledge curricula with corresponding Gender Action Plans (GAPs) in each company; (ii) design of educational, training and retraining programs in cooperation with vocational schools and universities; and (iii) establishment of railway PhD program for women.

(iii) **Subcomponent 2.3. Project Management and Citizen Engagement (US$ 2.7 million):** This subcomponent is designed to provide strong project management and ensure transparency and accountability of the project’s interventions and results. It will finance: (i) staff and technical support for the Project Implementation Unit (PIU) in the MCTI and the Project Implementation Teams (PITs) in RD, IZS, SC, and SV; (ii) training and knowledge exchange; (iii) communication and citizen engagement activities; (iv) Infrastructure works management plans; (v) office equipment; and (vi) operating costs.

---

9 While a comprehensive example of such a statement is available at https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/630675/high-level-output-specification-print.pdf, in the interest of practicality, clarity, and deliverability of outputs, it is strongly suggested that a simplified version is used in the first instance in Serbia.
Collection of user feedback about railway services will be done through public and multi-stakeholder consultations and gender disaggregated citizen engagement surveys.

Component 3: Railway Modernization Enablers (US$ 9.4 million)

28. **This component will finance measures to protect the vulnerable and poor and strengthen sectoral enablers for sustainable business growth and job creation.** The focus will be on utilization of information technologies in railway transport, which is currently still in its infancy, and on deepening knowledge of market potentials and developing strategies for attracting unconventional users. Through a mix of technical assistance and pilot investments, the following three enabling elements will be supported:

   (iv) **Subcomponent 3.1 Intelligent Railway Systems and SMS (US$ 5.8 million):** This subcomponent will support (i) the initiation of structured planning of IRS and (ii) the introduction of SMS in the railway sector. Technical assistance will be provided to help Serbian sector institutions to implement the ERTMS and deliver an implementation plan for IRS. To provide the opportunity for IZS technical staff to obtain experience in the selected IRS applications and the installation and operation of ERTMS, a demonstration project on one of the regional lines will be carried out. In addition, the subcomponent will finance set of activities that should set the foundations for full implementation of the SMS approach,\(^\text{10}\) in particular: (i) preparation of an SMS action plan; (ii) development of a railway network

---

resilience and investment plan; (iii) selected SMS and resilience interventions; (iv) monitoring and safety equipment for IZS; (v) risk management plans and early warning systems to respond to natural disasters and pandemics more effectively; and (vi) necessary supervision. The latter should identify short term investments needed to respond to COVID-19 operating conditions such as social distancing in trains and stations, staffing safety and health measures, and adequate service design during a pandemic emergency.

(v) **Subcomponent 3.2 Integrated Territorial Development (US$ 2.9 million):** The goal of integrated territorial development (ITD) in the sector context is to attract new users to railways by providing better connectivity to and synchronization with other transport modes and improved accessibility of the train terminals. The activity requires public sector involvement through regulatory changes, incentives, and a proper public relations effort. This subcomponent will finance a comprehensive study to allow GoS and IZS to understand how railway services could attract more users through better integration with the existing and future urban landscape. The study will identify and prioritize short to long term investments, including smaller interventions that will be financed through selected pilot projects in this Phase 1 operation as well as more complex projects to be implemented in the next phases of the MPA.

(vi) **Subcomponent 3.3 Modal shift (US$ 0.7 million):** This subcomponent will support essential first steps toward shifting traffic toward the railways as a greener and more affordable transport mode. To this end, a study will be financed to assess opportunities for increasing railway market share, including the potentials for attracting additional traffic, social implications, and impact on environmental footprint. In addition, this subcomponent will finance an analysis of the ownership alternatives for SC (SOE vs. privatization) and establish a roadmap for implementation of the selected approaches.

### Legal Operational Policies

<table>
<thead>
<tr>
<th>Project</th>
<th>Triggered?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects on International Waterways OP 7.50</td>
<td>No</td>
</tr>
<tr>
<td>Projects in Disputed Areas OP 7.60</td>
<td>No</td>
</tr>
</tbody>
</table>

### Summary of Assessment of Environmental and Social Risks and Impacts

The project has substantial environmental and social risks due to environmentally significant works planned under the Component 1 and Component 3, mainly related carrying out a program of track rehabilitation, construction and safety interventions to restore service performance (installation of measurement stations, renewal of existing lines), installation of measurement stations/defect detectors and approximately 150 railway level crossings, construction of the 2nd phase of Belgrade passengers train station Prokop construction, preparation of an SMS action plan and the implementation of selected SMS interventions. All interventions will be carried out on the already existing railway network and will include renewal of existing lines and supporting infrastructure. Construction of new railway lines (routes) is not envisaged; However, shorter sections (e.g. Bogojevo bypasses) are planned under the tentative list of
sub-projects. The Borrower will develop an Environmental and Social Management Framework (ESMF) with comprehensive screening procedures designed to successfully screen out all high-risk activities, including those triggering significant issues relating to land acquisition, impacts on natural habitats or cultural heritage, etc. The ESMF will address the E&S risks and guide the implementation of Project activities compliant to the goals and requirements of ESF as well as WB EHS Guidelines for Railways. Compliance will be ensured though implementation of ESA instruments: ESIA, ESMP, ESMP Checklist, CHMP, Biodiversity Management Plan and E&S Audits for ongoing projects. Preliminary screening of planned interventions indicate the Project risks to include: noise and air pollution, occupational health and safety (OHS), surface and ground water pollution, generation of large amounts of construction waste, hazardous waste (contaminated stone aggregate and sleepers, and other), use of nonrenewable resources, and others typical for construction and railways works. Risks to sensitive and protected areas are possible as the existing lines may be passing though protected areas. Activities that can impact cultural heritage will not be eligible for financing. Consequent to aforementioned, the following environmental and safety relevant standards apply: ESS1 Environmental Assessment, ESS2 Labor and Working Conditions, ESS3 Resource Efficiency and Pollution Prevention and Management, ESS4 Community Health and Safety, ESS5 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement, ESS6 Biodiversity Conservation and Sustainable Management of Living Natural Resources, ESS8 Cultural Heritage, and ESS10 Stakeholder Engagement and Information Disclosure. The overall Project implementation responsibility lies with the MoCTI, while the activities will be implemented by the aforementioned state-owned companies: Serbia Cargo (SC), Serbia Voz (SV) and Serbian Railways Infrastructure (IZS). Neither of the companies have Environmental Department or designated environmental staff. The infrastructure and the transport companies have closely worked with the World Bank supported TA but there is no experience with investment operation from the World Bank, nor with the ESF. Project management responsibilities will be assumed by the existing PIU for the WB supported project Trade and Transport Facilitation in Serbia. Due to lack of capacity for environmental and social management the PIU will be supported by a full-time environmental specialist, a full-time Social specialist and an Occupational Health and Safety (OHS) Specialist throughout project implementation. Given the structure of the MPA, uncertainty around subprojects and the overall ESRC the Project will be a subject to E&S corporate oversight.

E. Implementation

Institutional and Implementation Arrangements

29. Phase 1 of the MPA will be managed by MCTI through a Project Implementation Unit (PIU), supplemented by Project Implementation Teams (PITs) in RD, IZS, SC, and SV. The PIU will have primary responsibility for project execution, ensuring that the development objectives are met and that financial resources are budgeted, disbursed, expended, accounted and audited. MCTI’s PIU already has been established to manage the Serbian part of the recently approved WBTTFP, and new positions will be established to cover the needs of this MPA. The PIU will be strengthened with appropriate managerial and technical capacity to enable it to (i) manage and monitor progress of the entire project, (ii) carry out day-to-day implementation of project activities and progress reporting, (iii) oversee all project activities implemented by the companies; (iv) prepare technical documentation for activities that will be financed under the project; and (iv) participate in tender preparation and evaluation. MCTI, through the PIU, will be directly responsible for implementation of all components. The PITs will act as subordinate implementing agencies to provide technical support for specific subcomponents or activities of the MPA that pertain to their functions. MCTI will act as the contracting authority for all project-financed activities. MCTI will sign implementation agreements with each one
of these companies, setting out their specific responsibilities under the Project, including the establishment and operation of PITs by the time project becomes effective.

30. **The PIU will be staffed with personnel specifically hired for the project, while PITs will be staffed with mixes of agency staff and experts hired for the project.** Project funds will finance the additional staff for the PIU and experts needed to strengthen the PITs. Project staff will have capabilities in contract management, safeguards, and monitoring and evaluation. The PIU’s staff, full or part time, will include an environmental and safeguard expert, two railway experts, a human development expert, a transport planner, and a transport economist. PITs will be supplied with a railway investment expert, a rail asset management expert, and a business support management system expert. The PIU head and assistant is already in place, shared with the Trade and Transport Facilitation Project (P162043). Upon the project effectiveness, the critical technical staff will be hired – a human development expert and a railway expert.

31. **The Central Fiduciary Unit (CFU), within the Ministry of Finance, will carry out the coordination, administration, and oversight of procurement and finance.** The CFU has gained considerable experience in World Bank-related procurement and financial management since its creation in 2017 to serve as the fiduciary arm for Bank-financed projects in Serbia. At present, the CFU provides financial management and procurement functions to seven ongoing WB-financed projects and two grants. The CFU currently is composed of a Director, a Head of Operations, two Procurement Specialists, and two Financial Management Specialists. The MoF provides office and equipment for the CFU staff, while their salaries are paid on a rotation basis by the investment projects that the CFU supports. MCTI, the PIU, and the PITs will provide technical support to the CFU, specially for the development of procurement documents and evaluation of bids. If necessary, the CFU will be strengthened with additional procurement staff as per norms established by the Bank. The adequacy of this arrangement for the MPA has been assessed and found suitable. The Project Operations Manual (POM) will detail implementation arrangements, including the specific divisions of responsibilities between the MCTI, railway companies, and the CFU. The section on Risks below discusses the capacity of the implementation units. Further details on implementation arrangements are provided in Annex 1.

32. **A high-level Steering Committee and special technical working groups will be revitalized for the MPA.** The Railway Reform Steering Committee will be led by the line Minister and will include senior representatives and observers from relevant Ministries and entities, development partners, and the EU. The primary functions of the Steering Committee will be to facilitate resolution of any multi-sectoral obstacles in project implementation and to support reaching consensus about policy measures recommended under the project. Technical working groups will be formed as per need and will serve as consultative bodies to facilitate, among other things, proposed technical approaches, implementation of interventions at the local level together with municipalities, human capital related interventions, and the inclusion of new technologies and ICT solutions. The PIU will be the formal coordinator of the working groups. Working group members and leads will be determined as needed.

33. **The AFD would follow the World Bank Financial Management and procurement operational guidelines as well as the Environmental and Social Framework.** The collaboration between the World Bank FM team and the AFD would be as follows: (a) the World Bank FM team would review all periodic
audited project financial statements and un-audited interim financial reports provided by the Implementing agency; (b) the World Bank FM team will follow up with the implementing agency on these reviews, including monitoring and consultation on the implementation of recommendations in the auditors’ reports; (c) the World Bank FM team would serve as the focal point for AFD vis-a-vis the implementing agency in all matters related to FM under the Project. From the Disbursement perspective, the World Bank would: (a) review each withdrawal application furnished by the implementing agency to verify that the amount requested is eligible for financing under the AFD’s Financing Agreement; and (b) notify AFD that the withdrawal application is in proper order, and that it has determined that the amount requested is eligible for financing under the AFD Financing.

**CONTACT POINT**

**World Bank**

Victor A Aragones  
Senior Transport Economist

Svetlana Vukanovic  
Senior Transport Specialist

**Borrower/Client/Recipient**

Republic of Serbia

**Implementing Agencies**

Ministry of Construction, Infrastructure, and Transport  
Miroslav Prokic  
Advisor  
miroslav.prokic@mgsi.gov.rs

Serbia Railways Infrastructure  
Nebojsa Surlan  
Acting General Director  
nebojsa.surlan@srbrail.rs
FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000

<table>
<thead>
<tr>
<th>APPROVAL</th>
</tr>
</thead>
</table>
| Task Team Leader(s): | Victor A Aragones  
| | Svetlana Vukanovic |
| Approved By |
| Practice Manager/Manager: |
| Country Director: | Stephen N. Ndegwa | 12-Nov-2020 |