

The background of the cover is a photograph of a green and white train engine on a railway track, viewed from a distance. The train is positioned in the center of the frame, moving towards the viewer. The tracks are made of gravel and concrete sleepers. The sky is blue with scattered white clouds. Overlaid on the image are several thick, diagonal stripes in various colors: yellow, orange, red, pink, purple, and blue, extending from the bottom left towards the top right.

ADB

UNSTOPPABLE

The Hairatan to Mazar-e-Sharif Railway Project
Performance-Based Operation and Maintenance Contract

Asian Development Bank

Constructed in record time—and despite highly challenging circumstances—ADB’s first railway project in Afghanistan unclogged a key transport artery in the north crucial to Afghanistan’s reconstruction and trade potential. During the first year of its operation, an impressive 4 million tons of goods were transported on the Hairatan–Mazar-e-Sharif link, strengthening the local economy, increasing regional trade, and helping Afghanistan begin to redefine its role in the region. Today, this rail link still runs smoothly, and the socioeconomic benefits, already significant, continue to accrue.

The project’s sustained operational achievement can be largely attributed to an innovative new tool used by ADB: the performance-based operation and maintenance (O&M) contract. Under such a contract, the Hairatan–Mazar-e-Sharif Railway Project is outsourcing the O&M of the successful rail link, exemplifying that this arrangement can be duplicated in other developing member countries, especially fragile states like Afghanistan, to deliver projects efficiently and effectively.



First train operation between Hairatan and Naibabad

Hairatan to Mazar-e-Sharif

A Necessary Connection

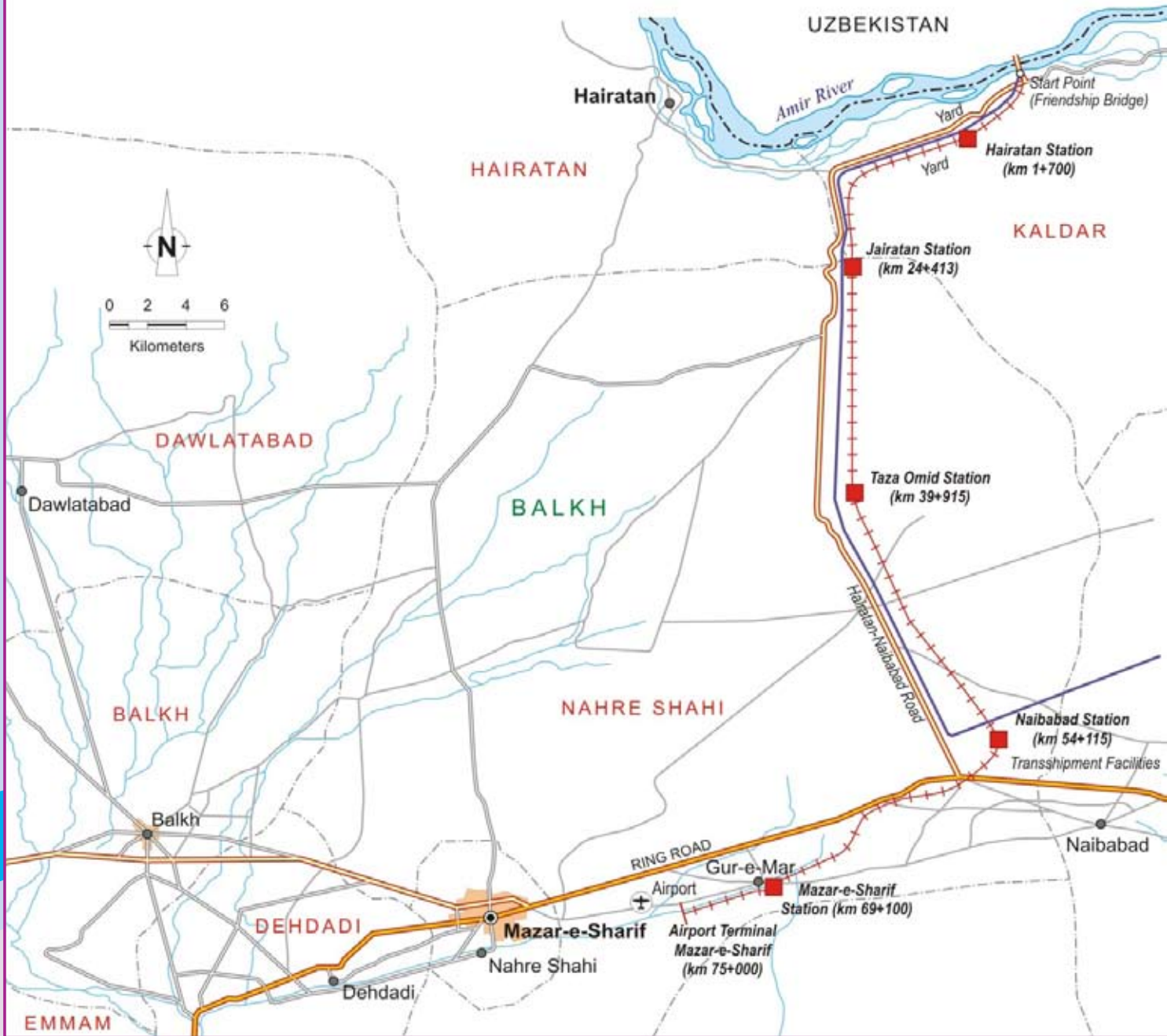
Following decades of civil war and political strife throughout its provinces, Afghanistan's transport network is in poor condition, and is a major impediment to the country's reconstruction and growth. An efficient, reliable transport network that supports trade and humanitarian relief is vital for the country's development; accordingly, the Afghanistan National Development Strategy, 2008–2020 provides for efficient, sustainable road and rail networks to be constructed as a supplementary transport mode for bulk goods between Central and South Asia.

Hairatan, a northern trading post on the border with Uzbekistan, serves as the gateway for half of Afghanistan's external trade, while Mazar-e-Sharif is Afghanistan's fourth-largest city and major trading center in the north. Already suffering from severe bottlenecks because of poor infrastructure, Hairatan had become more overwhelmed over the past few years due to security concerns in southern and eastern areas of Afghanistan, which were cutting off international trade and the delivery of much-needed materials and aid through those borders. Overburdened and underresourced, Hairatan required a railway link to Mazar-e-Sharif to facilitate the movement of goods into and throughout the country.

In response to Hairatan's issues and in line with the national development strategy, the Government of Afghanistan requested that ADB provide funding to construct a 75-kilometer railway line between Hairatan and Mazar-e-Sharif. The line is an extension of the existing line from Termez in Uzbekistan to Hairatan.

The link aimed to complement the Kabul–Mazar-e-Sharif ring road in transporting bulk and nonperishable cargo. Further, by strengthening Afghanistan's rail links with Uzbekistan, the project also hoped to promote regional cooperation and trade by complementing Central Asia Regional Economic Cooperation (CAREC) corridors that connect Central Asia to South Asia, the Caucasus, and the Middle East.

AFGHANISTAN HAIRATAN TO MAZAR-E-SHARIF RAILWAY PROJECT (as completed)





Infrastructure and train operation at station area



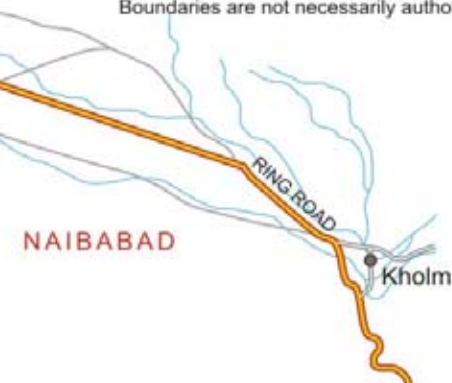
Automatic crossing at Naibabad



Automatic level crossing in operation

This map was produced by the cartography unit of the Asian Development Bank. The boundaries, colors, denominations, and any other information shown on this map do not imply, on the part of the Asian Development Bank, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries, colors, denominations, or information.

- Built-Up Area
 - National Capital
 - Provincial Capital
 - City/Town
 - Railway Station
 - Project Railway
 - Ring Road
 - National Highway
 - Provincial Road
 - Other Road
 - Power Transmission Line
 - River
 - District Boundary
 - Provincial Boundary
 - International Boundary
- Boundaries are not necessarily authoritative.



Engineering Project Success

In September 2009, ADB approved a grant for \$165 million, with the Government of Afghanistan contributing \$5 million.¹ Construction began in January 2010 and was completed by November 2010, significantly ahead of the schedule of engineering, procurement, and construction. The rail link underwent several trial runs, and testing to facilitate commercial operations.

The project's main outputs were

- 75 km railway design and construction;
- project management, construction supervision, and institutional development; and
- O&M of the railway facilities and ancillary infrastructure.

Railway design and construction. The Hairatan–Mazar-e-Sharif railway link was developed as envisaged and has successfully reduced trade bottlenecks at Hairatan; sped up the flow of goods into Afghanistan, including humanitarian assistance; and expanded the country's trade and commerce by linking to the railway in Uzbekistan.

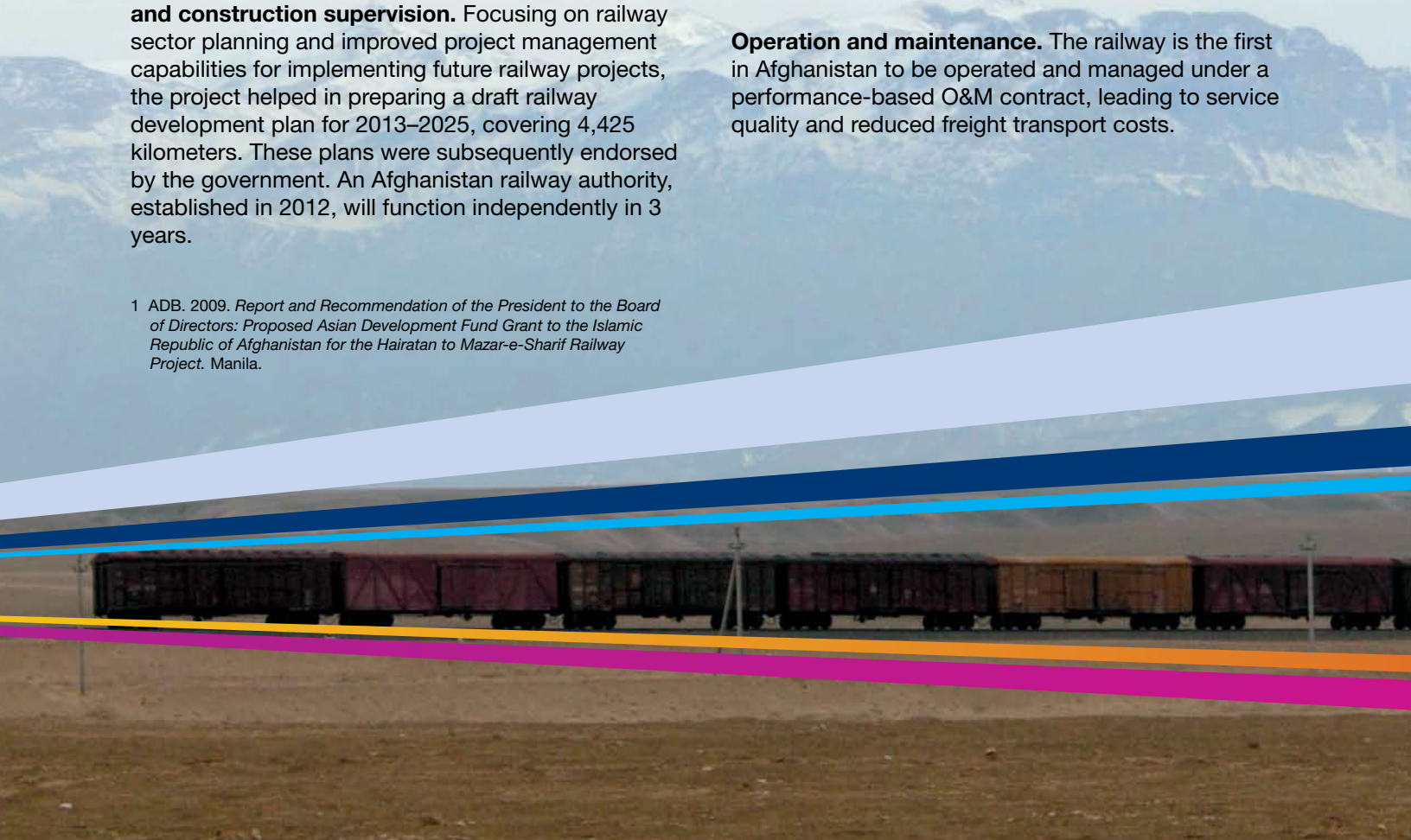
Institutional development, project management, and construction supervision. Focusing on railway sector planning and improved project management capabilities for implementing future railway projects, the project helped in preparing a draft railway development plan for 2013–2025, covering 4,425 kilometers. These plans were subsequently endorsed by the government. An Afghanistan railway authority, established in 2012, will function independently in 3 years.

Further, project management, effective planning, monitoring, and enhanced ADB supervision were key to project success. Accordingly, since this was the first railway project in Afghanistan, both the government and ADB ensured that strong measures were taken to mitigate the significant risks of start-up and implementation delays, and security.

The Ministry of Interior Affairs provided police personnel and equipment—and ADB provided the financing—for site security during construction and operation of the rail link. Security coordinators were engaged to manage the security arrangements, while the Ministry of Interior Affairs and the International Security Assistance Force (ISAF) engineered the security assessment. The Ministry of Interior Affairs provided security to site camps, project teams during implementation, new assets, and O&M activities and staff. About 463 police personnel were deployed at the project site and at about 62 check posts to ensure uninterrupted operation through 24-hour patrols. Moreover, to enhance security along the railway line, various security features were installed, including fencing, check posts and watchtowers, security cameras, electronic locks on station doors, and grills on station windows and doors.

Operation and maintenance. The railway is the first in Afghanistan to be operated and managed under a performance-based O&M contract, leading to service quality and reduced freight transport costs.

¹ ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Asian Development Fund Grant to the Islamic Republic of Afghanistan for the Hairatan to Mazar-e-Sharif Railway Project*. Manila.



The Performance-Based Operation and Maintenance Contract: Driving Project Achievement

When the project started, Afghanistan had no capable institutions to manage rail operation, no rolling stock, no rail equipment, and no experienced staff members to oversee a functional railroad. An arrangement had to be procured to fill these gaps and to maintain the associated infrastructure in a serviceable, safe condition. Toward these objectives, the Government of Afghanistan agreed to a concession with SE Sogdiana Trans, an offshoot of Uzbekistan's State Railways Company, using a performance-based O&M contract.


According to the contract signed between SE Sogdiana Trans and the Ministry of Public Works of Afghanistan on 27 July 2011, SE Sogdiana Trans will function as the operator of the rail link for at least 3 years. During this time, it will assist Afghan counterparts in creating the necessary infrastructure to maintain and service the link so that Afghan railway engineers and mechanics can assume these jobs in the future.

The contract, developed with independent railway and legal experts, details the operational requirements, standards, and maintenance of the railway facility. It includes standard contractual provisions, best industry practices, and various other features to make the agreement mutually acceptable considering both parties' liability, responsibility, and performance in meeting standards and requirements, with the objective of maximizing the transport of goods while maintaining the assets in good condition.

The contract seeks to

- facilitate economic development in Afghanistan;
- increase trade between Afghanistan and the region; and
- guarantee that an efficient, safe, and reliable rail transport link is operated and maintained.

Contract: <http://www.adb.org/projects/documents/hairatan-mazar-e-sharif-railway-project-performance-based-operation-and-maintenance-contract>



Train operation between Naibabad and Mazar-e-Sharif

Main Features of the Performance-Based Operation and Maintenance Contract

- Quantification of assets and characteristics of the railway system
- Required O&M services
- Requirements for operation and infrastructure maintenance
- Technical specifications and standards
- Necessary equipment for proactive maintenance
- Performance standards, including benchmarks of operational, rolling stock, and infrastructure asset maintenance; targets of goods to be transported per year; maintenance of infrastructure; correction of defective maintenance; type and availability of trains; procedures for delays, accidents, and incidents; and locomotive and wagon maintenance
- Format of the performance evaluation report of the operator by an inspector
- Inspector services
- Outline of the revenue account for revenue deposits, maintained by the operator and transferred at fixed intervals to the owner
- Quality management to meet best industry standards of O&M
- Performance securities and insurance
- Format of a summary of usage report to record operator activities performed
- Establishment of an operating monthly account, outlining costs and revenues
- Environmental management plan
- Description of force majeure events, conditions, or circumstances
- Security plan
- Staff organization
- Training for staff on O&M
- Dispute resolution mechanism

It specifies that SE Sogdiana Trans is to mobilize rolling stock, inspection and maintenance equipment, and experienced staff. SE Sogdiana Trans also must operate and maintain the condition of the rail infrastructure, rolling stock, and maintenance equipment according to specified performance norms, targets, and standards; service objectives included in the contract; and good industry practices. Toward this endeavor, a performance evaluation report, a summary of usage report, an environmental management plan, a security plan, and a dispute resolution mechanism are detailed. Thirty-two government staff members have already been trained, and additional training is slated for about 100 staff members over 2 years. Further, independent inspectors are required to periodically evaluate SE Sogdiana Trans's performance through inspections and certifications representing the Government of Afghanistan.

Innovations in the project, such as upfront determining technical and contractual specifications and requirements, O&M contract enabled the project to be completed in 3 years instead of the usual 5 years, despite the highly insecure environment. Further, ADB was very involved in finalizing and negotiating the contract, and identified and helped mitigate project risks early. It also ensured meticulous coordination among the parties and monitoring for effective implementation of the contract.

The main aspects that have led to its effective implementation and sustained success are as follows:

- The obligations and roles of the operator (SE Sogdiana Trans), owner (the Government of Afghanistan), and inspector are detailed, resulting in better understanding and coordination at various stages of implementation.
- Various bureaucratic matters for the operator, such as visas, registration, tax matters, and customs, were facilitated, leading to smooth mobilization and start of O&M services.
- Project requirements pertaining to safety, identification of defects, rectifications, quality management, reporting, auditing, and taxes and duties are being complied with during O&M, ensuring good governance.
- The inspector has been effective in ensuring the operator's performance, compliance, and best practices in O&M, acting on behalf of the owner.
- The mechanisms regarding tariffs, revenue collection, revenue account, and periodic transfer of revenue are detailed, and the checks and requirements of due diligence on the documentation of freight transport and customs clearance ensure accountability and transparency in the process and improve trust between the

- parties.
- Performance standards and respective benchmarks on operational services and infrastructure maintenance are enumerated, to achieve efficiency and effectiveness in operator services, safeguarding the infrastructure assets, and achieving project sustainability.
- The operator's payment structure and process minimize risk and continue to incentivize marketing and transport of goods by the operator by linking incremental costs to greater transport. Further, a letter of credit facilitates the smooth process of payments, and the contract contains provisions to deal with late payments, failure-to-pay situations, and taxes.
- Contractual provisions and procedures for improvements, based on annual recommendations, help better coordinate their execution for efficient operation and logistics.
- The requirement of parent company securities and warranties, in addition to the operator's performance security and insurance by both parties, minimizes the risks to the owner and overall project facility.
- The contract details provisions on dealing with force majeure events, disputes, governing law, and corrupt practices.

- The contract acknowledges the crucial issue of security by outlining the requirements and responsibilities of the owner and operator on security assessments, infrastructure, staff and equipment, reviews, and improvements in a comprehensive security plan and its implementation.

The revenues from tariffs generated during the first year of operation exceeded those forecasted. The future revenues are expected to cover O&M costs, as well as investment costs.

The recalculated financial internal rate of return is 8.05%, and net present value, \$227.13 million. At appraisal, the financial internal rate of return was 4.50%, and the net present value, \$79.17 million. Overall, the project was reassessed as financially viable.²

² ADB. 2013. *Completion Report: Hairatan to Mazar-e-Sharif Railway Project in Afghanistan*. Manila.



Train passing through a line of a station



Maintenance during winter



Winter inspection for maintenance



Signalling panel in Hairatan station



Formation maintenance



Points inspection and motor maintenance



Points maintenance

Signals of Project Success: Results, Benefits, and Impacts

In 2012, the first year that the railway was operational under the performance-based contract, the following were achieved:

- About 4.0 million tons of goods were transported to Afghanistan, including about 33,000 tons of humanitarian goods, compared to 3.2 million tons planned for the first year.
- At Hairatan, freight transported by trains reached about 6,500 tons per day in 2012, from 4,500 in 2008.
- The composition of heavy-vehicle traffic was about 40% at current volumes of freight traffic. At 2008 volumes of traffic, the composition was less than 35%.
- The travel time for freight transport by rail between Hairatan and Mazar-e-Sharif was reduced to about 1 hour.
- Carbon dioxide emissions in the corridor were about 1.9 million tons per year at current volumes of freight traffic. At 2008 volumes of traffic, emissions were reduced to less than 1.7 million tons.

On a micro scale, as well, benefits from the smoothly operating rail link have been promising. Thanks to the following impacts:

- *Employment.* Employment in the project area has shown an overall growth of 10%–11% per year. About 1,200 local people are employed in logistics and unloading operations, while more jobs are expected to be created in logistics services at stations, including for women.
- *Poverty reduction.* Poverty in the project area has been reduced through increased access to business opportunities for local communities, local companies, shippers, and freight forwarders; improved access to markets; and lower prices of goods due to lower transport costs.
- *Economic growth.* Local businesses registered growth of about 15%–65% during 2009–2012, depending upon the nature and size of business.
- *Health and safety.* Only 29 suspected cases of HIV were reported in Balkh Province, of which none were connected to the project area.



Lessons: Arriving at New Best Practices

The lessons from the Hairatan–Mazar-e-Sharif Railway Project, which may be incorporated into ongoing and future ADB projects in Afghanistan, are as follows:

Contract packaging. Combining the engineering, procurement, and construction and O&M into one package may yield more efficient and effective outputs. On this project, this would have given all parties a clear understanding of the requirements from project commencement, and risk mitigation measures could have been built into one contract. The contractor would also have been particularly vigilant in ensuring the best quality of works during construction, and the bidder would have had an opportunity to create more innovative ways of implementation and may have offered a more cost-effective bid. This combination could also minimize any additional due diligence required during O&M contracting, resulting in additional time savings. However, the concentration and performance risks must be mitigated through performance standards and deterrent contractual provisions.

Coordination of multiple government agencies. For projects in which several agencies are involved in decision making, it is important to establish an executive committee comprising representatives of the concerned agencies, and chaired by a high-level government champion. Such a committee could facilitate the provision of overall guidance, ensuring expeditious approvals from various agencies. In addition, in places where security is a major concern, it could ensure that project implementation is uninterrupted by establishing sustained security arrangements.

Intensive donor involvement. Implementing a project of the magnitude of the Hairatan–Mazar-e-Sharif Railway Project within a strict time frame was challenging. However, this was achieved through the close coordination and involvement of donors. ADB provided strong supervision from headquarters and the Afghanistan and Uzbekistan resident missions. Any matter requiring ADB's internal approval was expedited, and funds were released through a fast-track process.

ADB review on O&M with the operator, inspector, and owner-employer



The Future Remains on Track

The performance-based O&M contract has attracted high-value traffic to Afghanistan's railways and is providing business opportunities for private sector shippers and freight forwarders to trade cargo to Afghanistan. Based on discussions with freight-forwarding associations, traders' associations, and other stakeholders, it is likely that freight transport will continue to focus on high-value products such as petroleum, petroleum products, and gas (which constitute 50%–55% of total rail freight), followed by cotton, food items, construction materials, and forest products. It is also probable that the project will continue to garner sufficient revenues in the future, as freight transport is increased and its transport is shifted from roads to railways.

The recalculated economic internal rate of return, at 15.89%, and net present value of \$70.79 million, are higher than that estimated at appraisal and much higher than the ADB recommended discount rate of 12.00%.

Seizing on the success of the Hairatan–Mazar-e-Sharif Railway Project, the government plans to support the development of local logistics services and to introduce policies and interventions that will accelerate socioeconomic development, widen the reach of the project's benefits, and eventually transform this integrated transport corridor into an economic corridor. With ADB and other development partners, it recognizes Afghanistan's central location and potential to become a focal point for the transport of goods to Central Asia, Southeast Asia, and Europe. As long as the Hairatan–Mazar-e-Sharif link remains operational, Afghanistan has the ability to remain on track toward this goal.





Goods handling at Naibabad freight yard

Unstoppable: The Hairatan to Mazar-e-Sharif Railway Project Performance-Based Operation and Maintenance Contract

The first railway project of the Asian Development Bank (ADB) in Afghanistan has established a northern trade route, which is vital to the country's reconstruction. During the first year of its operation, 4 million tons of goods were transported on the Hairatan–Mazar-e-Sharif link, strengthening the local economy, increasing regional trade, and helping Afghanistan begin to redefine its role in the region. The project's sustained operational achievement can be largely attributed to a new tool used by ADB: the performance-based operation and maintenance contract. The Hairatan–Mazar-e-Sharif Railway Project demonstrates that such contracts can be duplicated in other developing member countries to deliver projects efficiently and effectively.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to two-thirds of the world's poor: 1.7 billion people who live on less than \$2 a day, with 828 million struggling on less than \$1.25 a day. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.