

CHINA: LUOYANG METRO PROJECT

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BACKGROUND. The Luoyang Metro Project, funded by a sovereign loan from the New Development Bank (NDB), was the first evaluation by the Independent Evaluation Office of the NDB (IEO) in China. The project aimed to establish Luoyang City's first metro line as part of a larger four-phase strategy developed by the provincial Government. Recognising the urgent need for a well-integrated and sustainable urban transport system, the project was designed to initiate Metro Line 1 in this historically and culturally rich city, which met the Government's criteria for prioritising development in areas based on their population size, economic growth, fiscal standing, and tourist appeal.

PROJECT DESIGN. The project's goal included enhancing Luoyang's infrastructure and connectivity and fostering economic growth, productivity, and environmental improvements. Anticipated benefits included improved travel conditions, reduced road congestion, and lower emissions. The project aimed to construct 22.34 km of metro line with 18 underground stations featuring tunnels and depots at both ends. The metro line's length was later extended, and an additional station was incorporated to enhance system efficiency.

NDB provided a USD 300 million sovereign project loan to the People's Republic of China to be on-lent to the People's Government of Henan Province to support the construction of the first metro line in the city of Luoyang. NDB loan proceeds were allocated for purchasing and installing equipment for Line 1 with procurement adhering to Chinese country systems and NDB's Procurement Policy. The Luoyang Rail Transportation Co. Ltd. served as the Project Implementation Agency.



Luoyang Metro Dispatch Control Center

MAIN FINDINGS. The project stands as a remarkable success, exceeding expectations in various aspects. Completed before time, the metro line spans 25.342 km with 19 stations and two overground facilities for train servicing and maintenance. This ambitious project entailed not only the physical construction of the underground tunnels and subways in a heritage site in a congested part of the city but also the establishment of an elaborate and robust institutional infrastructure, employing 2,613 regular staff while generating a range of employment opportunities.

The project received 15 awards in recognition of its innovation and strong technical capacity. Aligned with the Government of China's green and sustainable transport policies, the NDB funds were effectively utilised. The share of metro in motorised travel surpassed expectations, reaching 11.65% in 2022, about 194% of the target established at design. Similarly, the target set for the share of the metro in public transportation for 2022 was 24.13% in 2022, which is 202% of the target set in the design and monitoring framework. Passenger

PROJECT DATA

Approval date:	July 20, 2018
Loan signing date:	August 16, 2018
Project expected completion date:	December 31, 2021
Actual project completion date:	March 18, 2021
Project cost:	USD 2,775.7 million
NDB financing:	USD 300 million
Geographic coverage:	Luoyang City

satisfaction reached 98.17% in 2022, exceeding the appraisal target of 97%.

The passenger flow intensity and average travel time savings have been much lower than the expected targets, mainly due to travel restrictions imposed due to the COVID-19 epidemic (2020-2022) and the fact that a three-year passenger cultivation period is usually required for citizens to get used to the metro as one of the frequently used transportation methods.

The project has demonstrated technical sustainability in terms of staff capacity and compliance with high safety and environmental standards. Environmental sustainability is evident in reduced carbon emissions, noise pollution, and air pollution, with around 35% energy savings through innovative air conditioning in the subway stations. The replication and upscaling of this technology across China in all new metros could significantly impact energy savings in the country's transport sector.

LML1's experience emphasizes the vital role of a strong, supportive ecosystem from state institutions. The project's success is attributed to extensive technical and institutional support from various state bodies, underlining the importance of a supportive and coordinated ecosystem. While the project currently cannot sustain itself through its revenues, there is a strong government commitment to subsidize operations until required.

However, certain areas, including the quality of the design and monitoring framework, monitoring and evaluation activities, supervision processes, knowledge management, communication and outreach, and NDB staff continuity, deserve more attention.

THE INDEPENDENT EVALUATION OFFICE

The NDB Independent Evaluation Office was established in April 2022. The Director General of IEO reports directly and exclusively to the NDB Board of Directors. The main objective of IEO is to promote accountability and learning for enhancing the Bank's performance. IEO conducts a range of independent evaluations at different levels: evaluations of projects and programmes as well as of policies, strategies, instruments, and corporate processes.

RECOMMENDATIONS

Recommendation 1: Strengthening project evaluability

There is a need to strengthen NDB-financed project evaluability for assessing results, generating lessons, and promoting greater impact and sustainability. Among others, this would need project design reports to include an explicit theory of change, clearly and explicitly defined project objectives in a dedicated section of the report, and a coherent set of indicators listed in the design and monitoring frameworks at different levels of the results chain.

Recommendation 2: A sharper focus on green and climate-resilient technologies and innovations

NDB should ensure a sharper focus on the extent to which its investments lead to the adaptation of green and climate-resilient technologies and innovations. This can be done by promoting the inclusion of these criteria during the identification and selection of projects for financing, including specific clauses in the project financing agreements and the terms of references of supervision missions.

Recommendation 3: Strengthening the value additions of the Bank at project design

In designing new projects, sufficient attention should be given to ensure the design document adequately reflects the added value that the financing provided by NDB could bring to the borrower country and the project.

Recommendation 4: Improving project implementation support and supervision

More regular and in-depth supervision of projects should be undertaken to follow up on some of the emerging insights in a timely manner and capture the opportunities to enhance impact.

Recommendation 5: Developing knowledge products based on projects to facilitate scaling up

By consolidating experiences and good practices generated from the projects, IEO recommends that NDB prepare knowledge products to record and showcase the successful experience of NDB-financed projects. Project design reports should include dedicated provisions for knowledge management products and their dissemination.

Evaluation Lens provides a short summary of evaluations conducted by IEO. The full evaluation report and related documentation may be accessed through the IEO web pages.

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