



Report and Recommendation of the President to the Board of Directors

Project Number: 39175
November 2006

Proposed Loan and Administration of Loan from
Agence Française de Développement

Socialist Republic of Viet Nam: Greater Mekong
Subregion Kunming–Hai Phong Transport Corridor:
Yen Vien–Lao Cai Railway Upgrading Project

CURRENCY EQUIVALENTS

(as of 18 October 2006)

Currency Unit	–	dong (D)
D1.00	=	\$0.0000622
\$1.00	=	D16,055.00
\$1.00	=	€0.799169

ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
AFD	–	Agence Française de Développement
AP	–	affected person
DGTPE	–	Treasury and Economic Policy General Directorate of the French Ministry of Finance
EA	–	executing agency
ECF	–	Emerging Countries Facility
EMP	–	environmental management plan
GMS	–	Greater Mekong Subregion
GTZ	–	Deutsche Gesellschaft für Technische Zusammenarbeit
HCMC	–	Ho Chi Minh City
ICB	–	international competitive bidding
JBIC	–	Japan Bank for International Cooperation
KfW	–	Kreditanstalt für Wiederaufbau
km	–	kilometer
MG	–	meter gauge
m	–	meter
PPTA	–	project preparatory technical assistance
PRC	–	People's Republic of China
RCI	–	regional economic cooperation and integration
RPMU	–	Railway Project Management Unit
SDR	–	special drawing rights
SEDP	–	Socio-Economic Development Plan, 2006-2010
SEIA	–	summary environmental impact assessment
SG	–	standard gauge
TA	–	technical assistance
TEU	–	twenty-foot equivalent unit
VNR	–	Vietnam Railways
WB	–	World Bank

NOTE

- (i) The fiscal year of the Government ends on 31 December.
- (ii) In this report, "\$" refers to US dollars.

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- A. Outline Terms of Reference for Design and Supervision Consulting Services
- B. Financial Management Assessment of Vietnam Railways
- C. Weighted Average Cost of Capital of the Project

LOAN AND PROJECT SUMMARY

Borrower	Socialist Republic of Viet Nam
Classification	Targeting classification: General intervention Sector: Transport and communications Subsector: Railways Themes: Sustainable economic growth and regional cooperation Subthemes: Promoting economic efficiency and enabling markets and fostering physical infrastructure development.
Environment Assessment	Category B. An initial environmental examination (IEE) was undertaken and the summary IEE is in Appendix 11.
Project Description	The Project is designed to promote sustainable economic growth by rehabilitating 285 kilometers (km) of railway line from Yen Vien station in the northern suburbs of Hanoi to Lao Cai on the border with the People's Republic of China (PRC). The Project will develop a safe, efficient, and environmentally sustainable railway transport system in the northwest region of Viet Nam, enhance connectivity with the PRC through the Kunming–Hai Phong transport corridor, and assist with institutional reform of the railway subsector.
Rationale	The Hai Phong to Lao Cai railway forms part of the Kunming–Hai Phong transport corridor linking Yunnan province in the PRC with Viet Nam. Minimal investments in improvements and maintenance have meant that the railway bed and track have deteriorated and no longer meet capacity and safety requirements. The Project will rehabilitate the rail system to ensure it is capable of operating safely and efficiently. Increasing capacity at stations and main terminal points and carrying out strategic rehabilitation will permit the use of heavier and longer trains and an increase in the number of trains using the railway line. The Project will contribute to the Asian Development Bank's (ADB's) support for cooperation in the Greater Mekong Subregion (GMS) and for the Government's investment in transport infrastructure.
Impact and Outcome	The Project will support Viet Nam's economic development and strengthen regional integration by enabling cost-effective and efficient railway services on a strategic transport corridor within Viet Nam and between Viet Nam and the PRC. The Project will remove a capacity constraint on the existing railway line, improve rail transportation services on a vital stretch of the Kunming–Hai Phong transport corridor, improve safety, and support institutional reform in the railway subsector.
Project Investment Plan	The investment cost of the project is estimated at \$160 million equivalent, including taxes and duties of \$12.17 million.

Financing Plan	Source	(\$ million)	
		Total	%
	Asian Development Bank	60.00	37.50
	Agence Française de Développement	40.00	25.00
	DGTPE (MOF, France)	37.50	23.40
	Government	22.50	14.10
	Total	160.00	100.00

DGTPE (MOF, France) = Treasury and Economic Policy General Directorate of the French Ministry of Finance.

Source: Asian Development Bank estimates.

Loan Amount and Lending Terms

A loan equivalent to \$60 million in special drawing rights will be provided from the Special Funds resources of ADB. The loan will have a 32-year term including a grace period of 8 years, and an interest rate of 1% per annum during the grace period and 1.5% per annum thereafter. Agence Française de Développement (AFD) will provide a loan of €32 million (\$40 million equivalent) through its concessionary loan facility, and the Treasury and Economic Policy General Directorate of the French Ministry of Finance (DGTPE) will provide a loan of €30 million (\$37.50 million equivalent) through its Emerging Countries Facility (ECF). ECF loans fall under French official development assistance and are primarily dedicated to the procurement of French goods and services. The terms are typically 20-year maturity with a 5-year grace period and an interest rate of 1.25%. The Government will finance \$22.50 million equivalent, including all taxes and resettlement costs.

Allocation and Relending Terms

The proceeds from ADB, AFD, and DGTPE loans will be made available by the Borrower to the Vietnam Railways (VNR).

Period of Utilization

Until 31 December 2012

Estimated Project Completion Date

30 June 2012

Implementation Arrangements

The Railway Project Management Unit (RPMU) will be responsible for implementing the Project, under the direction of the VNR. The RPMU is one of four RPMUs of the VNR. It has a director, deputy director, and a small complement of planners and engineers. Additional qualified technical, financial, and support staff for project management and implementation will be hired. This team has worked closely with the project preparatory technical assistance (PPTA) consultants to prepare the project, and will be responsible for preparing the Government's feasibility study, which is required for Government approval of the Project.

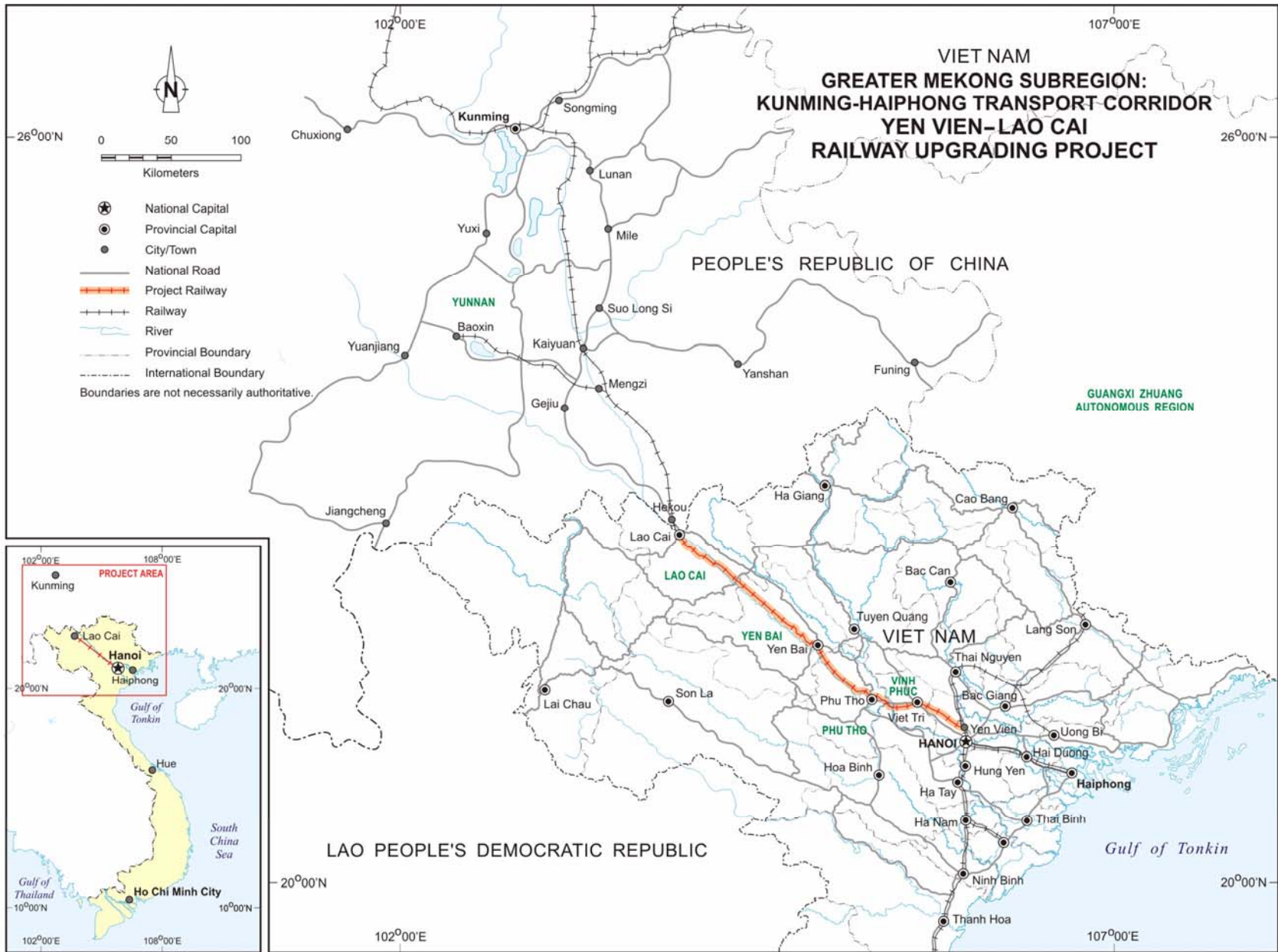
Executing Agency

Vietnam Railways

Procurement	Procurement under the ADB and AFD-financed components will be in accordance with ADB's <i>Procurement Guidelines</i> . DGTPE does not have its own procurement guidelines and follows those of the beneficiary. The Government has requested the use of advance action for procurement.
Consulting Services	The ADB loan will finance 200 person-months of international consulting services and 524 person-months of national consulting services for detailed engineering design, preparation of bid documents and construction supervision, construction quality control, environmental supervision, procurement, and monitoring and evaluation of the safeguard aspects of the Project in accordance with ADB's policies on involuntary resettlement, environment, and indigenous peoples, and with Government procedures acceptable to ADB. The international consultants will be recruited in accordance with ADB's <i>Guidelines on the Use of Consultants</i> .
Project Benefits and Beneficiaries	The Project will (i) increase the corridor's capacity, benefiting consumers and producers of goods and services through the provision of timely and efficient transport services and lower costs; (ii) generate direct and indirect employment in the project-influenced area, and create jobs and income-earning opportunities; (iii) greatly facilitate subregional trade, in particular by providing Kunming and the rest of Yunnan province with closer and potentially more efficient access to the sea, through Viet Nam's Hai Phong port; and (iv) stimulate local development through tourism, and railway station area development. The major project beneficiaries will be (i) passengers, including tourists; (ii) freight users; (iii) local residents who will benefit from the lower prices of commodities and services transported by the project railway; (iv) local labor involved in construction work and supply of materials during implementation and later in operation of the railway; (v) local manufacturers and traders who will be able to increase production capacity or establish businesses; and (vi) local governments, which will benefit from the increased opportunity for local area development and increased revenues. The Project will benefit more than 200,000 people living in the project area. Consultations with the local people in the project area indicated they strongly supported the Project. The Project is financially and economically sustainable. The 3.0% financial internal rate of return exceeds the 0.54% weighted average cost of capital. The economic internal rate of return is estimated at 16.1%.

Risks and Assumptions

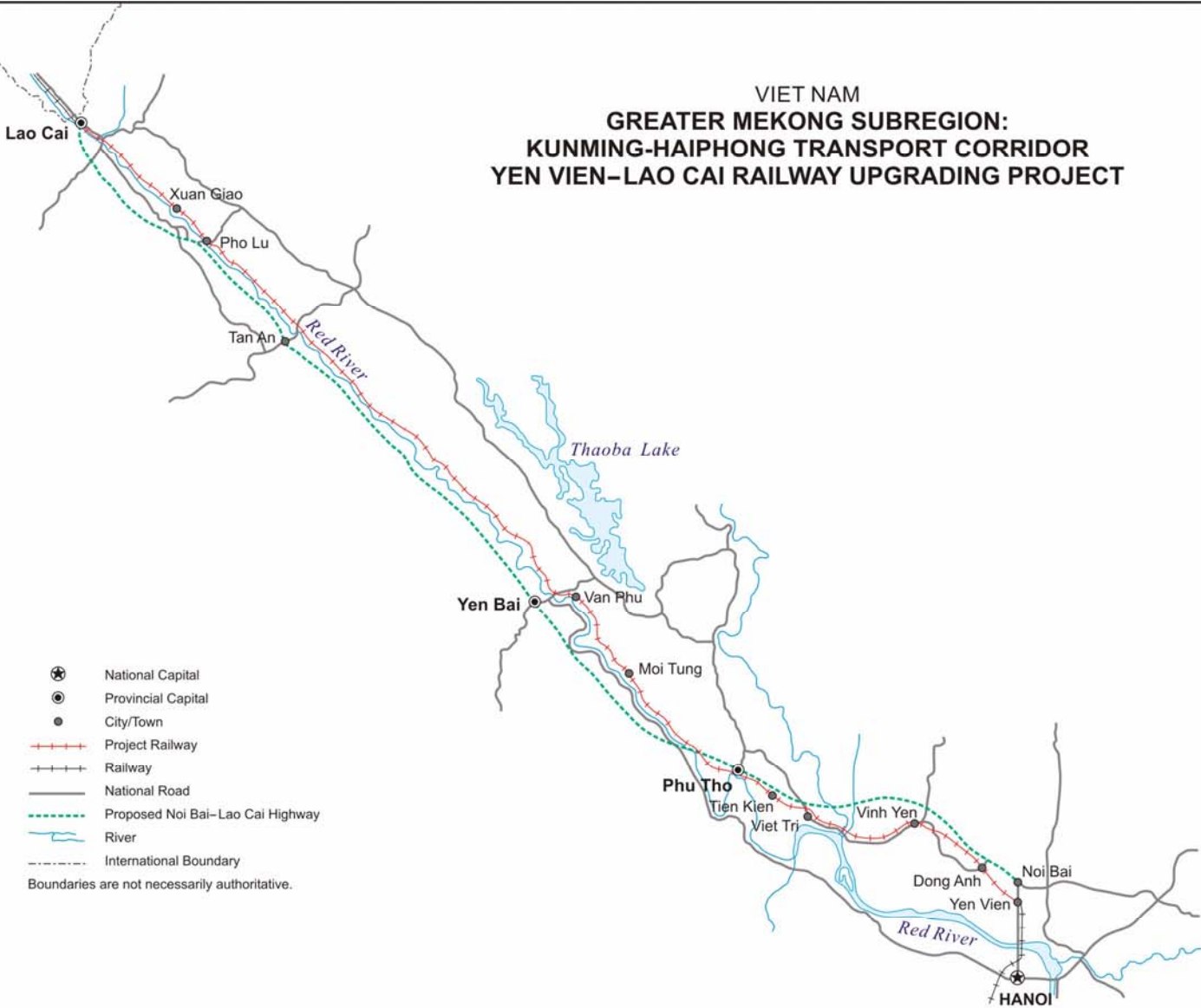
The main risks to the Project are related to the traffic forecasts, particularly international traffic between Viet Nam and the PRC. Realizing the forecast of international traffic will depend on the successful implementation of the GMS Cross Border agreement at the Lao Cai/Hekou border crossing, scheduled for 2008. The commitments of the governments to implement the border-crossing agreement and continued ADB assistance in this area will mitigate this risk. Delays in the implementation of the PRC's plans to construct a new railway line between Kunming and Hekou that would replace the existing line that connects to the project railway could have a negative impact on the project railway's international traffic, with a corresponding negative impact on the Project's economic and financial viability and subregional benefits. However, the successful implementation record of railway projects in the PRC suggests this risk is slight. Traffic levels on the railway may decrease if the amount of traffic diverted to the proposed new highway from Noi Bai to Lao Cai exceeds predictions. However, because different types of traffic are carried by railway and road, this is not expected to happen. Realizing the traffic forecasts is also dependent on the maintenance of the adjacent Hanoi–Hai Phong railway line, so there is no decrease in its capacity. Assistance to VNR from ADB and German development assistance through GTZ for institutional reform will mitigate this risk.



Map 1

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VIET NAM
**GREATER MEKONG SUBREGION:
 KUNMING-HAIPHONG TRANSPORT CORRIDOR
 YEN VIEN-LAO CAI RAILWAY UPGRADING PROJECT**



- ★ National Capital
 - Provincial Capital
 - City/Town
 - - - - - Project Railway
 - + + + + + Railway
 - National Road
 - - - - - Proposed Noi Bai-Lao Cai Highway
 - ~ River
 - - - - - International Boundary
- Boundaries are not necessarily authoritative.

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on (i) a proposed loan to the Socialist Republic of Viet Nam for the Greater Mekong Subregion (GMS) Kunming–Hai Phong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading Project; and (ii) proposed administration by the Asian Development Bank (ADB) of a loan to be provided by Agence Française de Développement (AFD) for the Project. The design and monitoring framework is in Appendix 1.

II. RATIONALE: SECTOR PERFORMANCE, PROBLEMS, AND OPPORTUNITIES

2. Through rehabilitation and upgrading of the Yen Vien–Lao Cai railway line, the Project will strengthen the subregional infrastructure network and improve the national transportation system connecting Hanoi with the northern provinces. It will improve connectivity along the Greater Mekong Subregion (GMS) northern economic corridor, comprising northeastern Viet Nam and Yunnan province of the People's Republic of China (PRC). The improvements to the railway infrastructure conform to the Government's overall plan to strengthen the integrated Kunming–Hai Phong transport corridor, including its rail, road, and port facilities. The Project is in line with the strategic thrust of strengthening connectivity and facilitating cross-border movement and tourism under ADB's regional cooperation strategy and program approved by the Board of ADB in March 2004. The Project is included in the lending program for 2006 in the regional cooperation strategy and program updates for 2006–2008 and 2007–2009.¹

3. The Project's reform agenda will support the Government's objective to make rail transport more competitive and financially sustainable, thereby reducing the burden on state finances and increasing the competitiveness of the economy. The improved transport network will increase access to Lao Cai province, which is among the poorest provinces in Viet Nam and whose population includes a number of ethnic minorities. It will open up opportunities for trade and investment and foster economic growth in the subregion. The employment and income-generating opportunities from increased trade and economic growth will help to reduce poverty. ADB provided technical assistance (TA)² to prepare the Project.

A. Performance Indicators and Analysis

4. The transport sector in Viet Nam comprises road; railway; inland water; international sea traffic, through the ports in Ha Long, Hai Phong, Da Nang, and Ho Chi Minh City (HCMC); and domestic and international air traffic centered on Hanoi and HCMC. The country's transport infrastructure suffered severe destruction and degradation during more than three decades of war and its rehabilitation has been a primary goal of the Government. The Government's efforts are focused on (i) reconstruction of the road network, (ii) rehabilitation and upgrading of the railway system, together with reforms to improve efficiency and sustainability of operation, (iii) modernization and upgrading of international airports, and (iv) rehabilitation and modernization of the ports. The Government made investment in transport infrastructure a key priority in its 2001–2005 public investment program. Nationwide, freight and passenger demand measured in ton/passenger km grew by 10% a year over the same period. While road remains the dominant mode of freight transport, accounting for 65% of traffic by weight, rail plays an increasingly significant role, particularly in the transport of bulk cargo over long distances.

¹ ADB. 2005. *Regional Cooperation Strategy and Program Update for the GMS (2006-2008)*. Manila; and ADB. 2006. *Regional Cooperation Strategy and Program Update for the GMS (2007-2009)*. Manila.

² ADB. 2005. *Technical Assistance to the Socialist Republic of Viet Nam for Preparing the Greater Mekong Subregion: Hanoi–Lao Cai Railway Upgrading Project*. Manila.

5. The Vietnamese railway network, 2,600 kilometers (km) long, was mainly constructed in the early part of the 20th century using the French meter gauge ([MG], 1.0 meter [m]) line. It links the main population, cultural, agricultural, and industrial centers in Viet Nam and connects with the PRC standard gauge ([SG], 1.435 m) railway networks at Lang Son in northeast Viet Nam and with the PRC's MG network in the land-locked province of Yunnan at Lao Cai in the northwest. The railway in Viet Nam is a strategic link in the GMS Transport Sector Strategy's southern and north south corridors, which connects Cambodia, Thailand, and Viet Nam with the southern PRC. It is part of the plan to connect Singapore to Kunming by rail, a long-term development priority for the Association of Southeast Asian Nations (ASEAN).³

6. Efficient railway transport will improve subregional traffic and significantly reduce the cost of transport by offering cheaper alternatives and providing competition to existing modes and routes. Railway transport will reduce road maintenance requirements and the incidence and severity of traffic accidents by diverting heavy and hazardous road haulage to the railway. Overall, the increase in the efficiency and effectiveness of rail transport will improve transport safety. Efficient rail operations will directly benefit Government finances by reducing the railway's deficits. The Government recognizes these benefits and is giving high priority to the rehabilitation of the railway.

B. Analysis of Key Problems and Opportunities

1. Railway Subsector

7. The present problems and issues in the railway subsector arise from a historical legacy of central government ownership and operation with insufficient concern for economic efficiency of operations, quality of services, or sustainability of operations. The state invested in and subsidized the railway. The current level of transport technology, equipment, and system capacity cannot meet the demands of a market economy.

8. Reform of the railway subsector has increasingly been an area of concern. Since the 1990s, railway reform has passed through various stages. In 1994, financial responsibility for rail infrastructure and operations was separated.⁴ Since 2000, Germany has supported the restructuring of the Vietnam Railways (VNR) with the goal of (i) making VNR's operations more market-oriented and competitive; (ii) supporting an internal reorganization to make operations more efficient and effective; and (iii) helping to establish a legal framework to liberalize the railway subsector and promote subregional integration. In March 2003, VNR was established as a state corporation operating in railway transport and related services.⁵ The administration of the railway and management of the infrastructure was assigned to the Viet Nam Railway Administration under the Ministry of Transport.⁶

9. Following the separation of rail infrastructure and operations, the core business of VNR is to operate and provide rail services on the principle of financial self-sufficiency. Funding for infrastructure maintenance and capital investment is provided by the state. VNR pays an infrastructure use charge to the Government, which is currently 10% of the gross annual transport revenue. VNR is responsible for buying and maintaining locomotives, and investing in maintenance facilities. It is free to set tariffs for the freight services it provides, based on market demand. A Railway Law was passed by the National Assembly on 19 May 2005, providing a basis for further development of the railway subsector. Regulations for implementing the

³ ADB. 2006. *TA 6195-REG: GMS Transport Sector Strategy Study, Final Report*. Manila (June).

⁴ Prime Minister's Dispatch No.46/VPCP dated 26 March 1994.

⁵ Prime Minister's Decision 34/2003/QD-TTG issued on 4 March 2003.

⁶ Government Decree 34/2003/ND-CP dated 4 April 2003.

provisions of the Railway Law will be needed for the benefit of investors. This and other issues related to the financial sustainability of VNR will be addressed under the Project.

10. Because of the length of the haul from the north to the south of Viet Nam, the economy would benefit substantially from an efficient and cost-effective rail transport. This can only be achieved through strategic investments in infrastructure and facilities. However, resource constraints limit the amount available from public sources. An enabling environment will need to be created to make private sector participation more attractive and to infuse modern management and business practices into the railways. Other transport modes, particularly road transport, have significantly benefited from private sector participation. A sector analysis is given in Appendix 2.

2. Regional Cooperation

11. In order to achieve its vision of a prosperous, integrated, and harmonious subregion, the ADB-supported GMS program is focused on enhancing connectivity, improving competitiveness, and engendering a sense of community. Viet Nam has an important role to play in the pursuit of this strategy. Thailand and Viet Nam are the only GMS members that are part of the north–south, east–west, and southern economic corridors. Viet Nam provides a rapidly growing market and serves as a vital gateway for the subregion. It is a major advocate of the transformation of the GMS transport corridors into full-fledged economic corridors, including the early implementation of trade and transport facilitation to improve the subregion’s competitiveness. Viet Nam has been active in the GMS program and has participated in loan and regional TA projects.⁷

12. The project railway line is an important component of the Kunming–Hai Phong transport corridor, which is part of the GMS north-south economic corridor. The Kunming–Hai Phong transport corridor is also included in the “Two Corridors-One Economic Belt” initiative agreed by the leaders of the PRC and Viet Nam in 2005 to further the growing economic relations between the two countries. Trade between Yunnan province and Viet Nam has grown dramatically in recent years. Total trade value registered at the Lao Cai/Hekou border crossing points along the Kunming–Hai Phong transport corridor expanded by 36% in 2003 and by 51% in 2004 (to \$366 million). This figure accounts for 80% of Yunnan–Viet Nam trade and 10% of the PRC–Viet Nam trade in 2004. Nearly 1 million tons of cargo is transported annually across the Lao Cai/Hekou border crossing points.

13. The GMS initiative aims to tap the comparative advantages of each GMS country for the benefit of the subregion as a whole. The recent formidable economic growth of both Viet Nam and the PRC will put considerable strain on all transport modes in the Kunming–Hai Phong corridor. Road, rail, and ports are reaching their capacities and commodities need to be directed to the most cost-effective transport modes and routes. High growth in Yunnan province, which to a large extent is export-driven, requires cost-effective outlets. Fangcheng and Beihai ports in the PRC have lower capacity than Viet Nam’s Hai Phong port, which is also about 250 km closer to Yunnan and more cost-effective. The road alignment within the corridor is being

⁷ As of the end of June 2006, of the 26 ADB-assisted loan projects for the GMS with a combined amount of \$6.5 billion (for which ADB has extended \$1.8 billion in loans), Viet Nam participated in 5 loan projects with a combined amount of \$572 million (for which ADB extended \$154 million in loans). Viet Nam was a recipient of all four multi-country ADB loans for the GMS, including the Ho Chi Minh City–Phnom Penh Highway Improvement Project (with Cambodia) and the East-West Transport Corridor Project (with Lao People’s Democratic Republic). Viet Nam has also been involved in 103 (out of a total of 124) ADB-supported regional TA projects, for which ADB has provided \$58 million, including, among others, the (i) formulation, negotiation, and finalization of an agreement for the facilitation of the cross-border movement of goods and people; (ii) conduct of the Transport Sector Strategy Study (TSSS); and (iii) formulation of a Strategic Framework for Action on Trade Facilitation and Investment.

upgraded under a separate project with ADB assistance. There is substantial traffic in local mineral resources and containers to and from the PRC by road over distances that would be more economic by rail. Before the opening of the border between Viet Nam and PRC, this railway line was neglected both in terms of maintenance and investment and it is not fit to carry the expected traffic. The Governments of Viet Nam and the PRC are both committed to improving trade facilitation under a bilateral agreement, and are both active participants in the ADB-assisted GMS economic corridor concept and the GMS Transport Forum.

3. The Government's and ADB's Strategy

14. The recently approved Socio-Economic Development Plan, 2006–2010 (SEDP)⁸ for Viet Nam recognizes the importance of regional cooperation and integration in the attainment of the Millennium Development Goals and Viet Nam's own development goals. Border districts and provinces, including Lao Cai, are among the poorest areas in the country, and their development is significantly influenced by Viet Nam's neighbors, including Yunnan province. Intraregional trade and investments have played an important role in accelerating the pace of economic growth in Viet Nam. The SEDP seeks to strengthen and expand Viet Nam's participation in regional cooperation activities as regional cooperation and integration (RCI) gains momentum in Southeast Asia. Given Viet Nam's strategic location, RCI offers the potential for increased trade and investment through better infrastructure links and expanded markets. Toward this end, the SEDP supports the development of cross-border infrastructure and customs and administrative reform.

15. Greater synergy between the SEDP and the GMS program is supported by ADB's country strategy and program for Viet Nam (2007–2010)⁹ and the regional cooperation strategy and program for the GMS (footnote 3). The GMS program's strategic priorities will continue to be the framework for RCI activities in Viet Nam during the country strategy and program period. RCI through the GMS program is expected to contribute to economic growth, socially inclusive development, and environmental sustainability. Economic activities and private sector investment will be stimulated in areas influenced by the economic corridors.

16. The overarching objective of ADB's strategy is the reduction of poverty through implementation of an economic development strategy that is closely aligned to the SEDP and its targeted outcomes. The strategy emphasizes the importance of the smooth movement of people and goods in an economically, socially, and environmentally sustainable manner. The objective of ADB's strategy for the railway sector in Viet Nam is an economically viable railway system that meets the demands of a rapidly growing economy efficiently and effectively. The strategy envisages a mix of investment and institutional interventions to rehabilitate and upgrade the physical infrastructure and the legal and regulatory framework for the railway system. The investment objective of the strategy is to help the Government to rehabilitate and upgrade the existing rail network to meet the demands created by rapid economic growth and to extend the benefits of this growth to the remote and poor northwestern regions. The institutional objective is to make rail transport more competitive and financially sustainable, through pricing reforms and private sector participation in investment and rail services.

4. Lessons

17. Previous ADB-financed transport sector projects have been delayed because of (i) late procurement of contractors; (ii) weaknesses in engineering designs because insufficient resources were assigned to preliminary investigations; (iii) executing agencies' lack of familiarity

⁸ The SEDP was approved by the National Assembly in June 2006.

⁹ ADB. 2006. *Country Strategy and Program for Viet Nam (2007-2010)*. Manila.

with ADB's procurement guidelines; and (iv) inflexibility with regard to project scope (e.g., the rigidity of the requirement to adhere to the Government's feasibility study makes subsequent changes in scope very difficult). At the Government's request, for this Project advanced action has been approved to allow the early recruitment of consultants to review the project design and prepare bidding documents, followed by the procurement of contractors. A period of 18 months has been allowed for procurement activities. RPMU staff will be invited to participate in training on ADB's procurement and project implementation procedures and will be given access to ADB's extensive publications and information on procurement and project implementation. The need to minimize inconsistencies between project scope and the Government's approved feasibility study has been addressed by including additional site surveys and ensuring greater attention to detail than would ordinarily be expected for an ADB feasibility study.

5. External Assistance

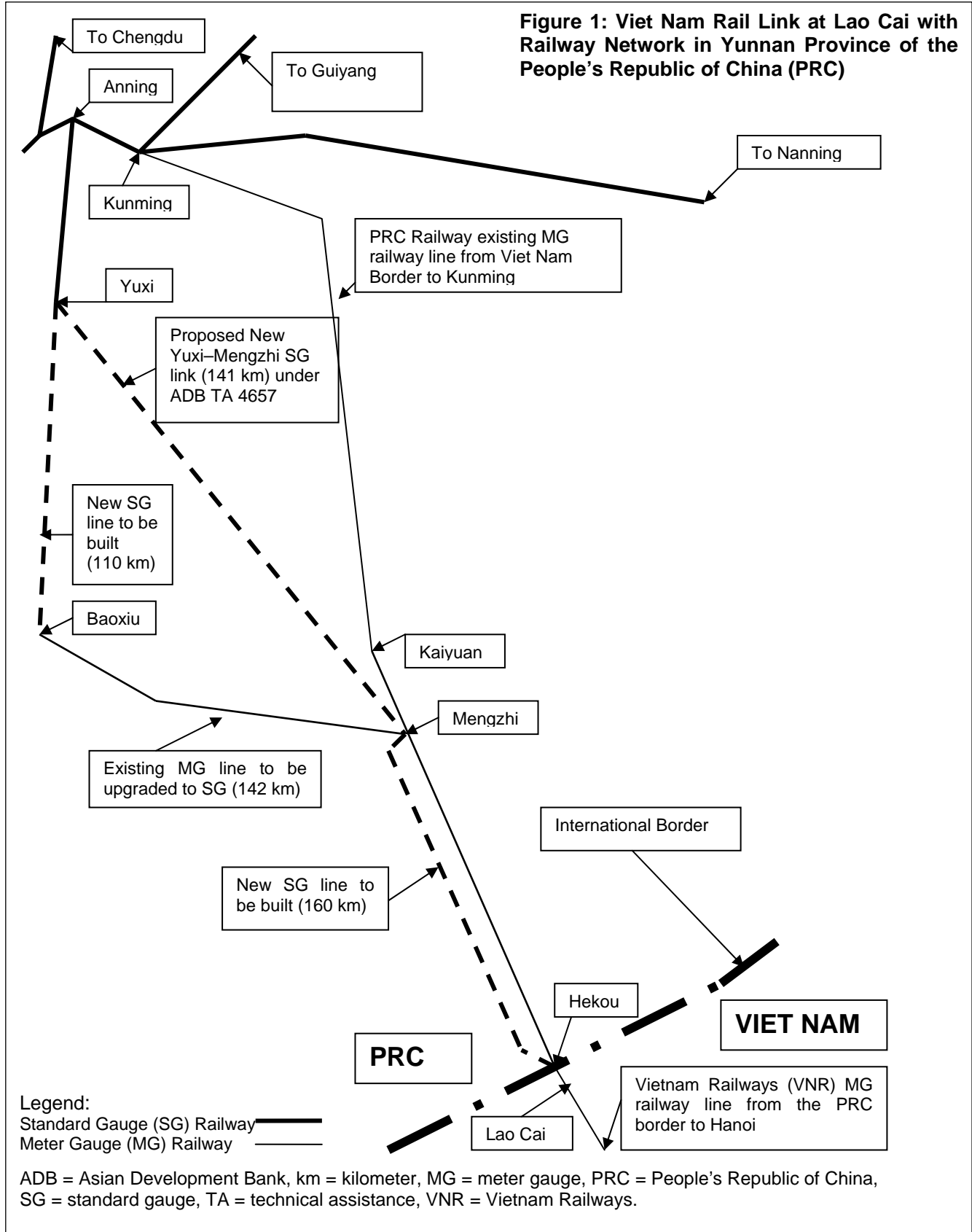
18. The largest sources of external assistance to the transport sector in Viet Nam are the World Bank; ADB; and the governments of France, Germany, and Japan. External assistance to the railway subsector has primarily come in the form of bilateral assistance from France, Germany, and Japan. Details on external assistance to the railway subsector are shown in Appendix 3.

III. THE PROPOSED PROJECT

19. The project railway line, a non-electrified single-track MG line, which opened between 1903 and 1910, traverses about 285 km in a generally northwesterly direction from Yen Vien station, along the northern bank of the Red River to Lao Cai. The line crosses a varied terrain, including mountainous areas; connects a number of cities, towns, and industrial and residential areas; and carries substantial traffic (transit traffic between Hai Phong port and the PRC's Yunnan province, bilateral trade between Viet Nam and the PRC, and domestic traffic, including from the apatite mine at Xuan Giao to the phosphate and chemical company near Tien Kien). The railway line also provides reliable and cheap passenger transport to the poor northern provinces. Rail services are popular, especially for tourists and locals visiting the mountainous region around Sa Pa, which is about 35 km from Lao Cai. The alignment of the railway is characterized by tight curves; steep gradients; poor quality track, in particular lack of ballast; old and worn rail; insufficient track capacity at main stations; passing loops that are too short to accommodate full-length trains; and bridges that have deteriorated due to war damage, corrosion, and steel fatigue and which require speed restrictions. In addition, proximity to the Red River means that some sections of the railway embankment require regular embankment protection works to prevent subsidence.

20. The PRC is planning to upgrade its rail link to the border to SG (1435 mm) as part of its national railway standardization program (see Figure 1). The proposal includes: (i) extension of the existing Kunming–Anning–Yuxi SG rail link to Mengzhi (on the existing MG route), either by building a new SG link from Yuxi to Mengzhi or by building a new SG link from Yuxi to the existing MG terminal at Baoxiu and converting the existing Baoxiu–Mengzhi MG link to SG; and (ii) building a new 160 km SG rail link from Mengzhi to the Viet Nam border at Lao Cai.

Figure 1: Viet Nam Rail Link at Lao Cai with Railway Network in Yunnan Province of the People's Republic of China (PRC)



21. An operational analysis carried out as part of the project preparatory technical assistance (PPTA) has shown that the forecast traffic for the period to 2020 cannot be accommodated on the existing line. A combination of measures will be required to increase capacity to meet this additional traffic.¹⁰ The Project has been designed to implement the most important of these measures.

A. Impact and Outcome

22. By removing capacity constraints, the project will: (i) facilitate trade and enable economic growth within and between northwestern Viet Nam and Yunnan province; (ii) facilitate access to and from Hai Phong port to Yunnan province, especially for container traffic; (iii) reduce transport costs; (iv) improve traffic safety; and (v) secure sufficient railway capacity to handle future traffic demand to 2020.

B. Outputs

23. The project comprises the following components.

- (i) **Track component.** (a) Improving the alignment of the existing track, especially at sharp curves and in the vicinity of the Red River (to address problems associated with flooding, subsidence of embankment, and slope stability); (b) replacing worn-out rails with heavier hardened-steel rails, particularly on sections of track having sharp curves where rail wear is most severe; (c) replacing old sleepers and fastenings to prevent gauge expansion; (d) replacing worn out turnouts on the main line, and (e) ballasting of track. A total of about 240 km will be replaced with new rails, sleepers, and fastenings.
- (ii) **Bridge component.** (a) Construction of six new bridges; (b) rehabilitation of 13 war-damaged and corroded bridges, which currently have speed restrictions; and (c) strengthening of up to 60 substandard bridges to enable use of heavier and more powerful locomotives.
- (iii) **Terminals component.** (a) Constructing a new intermediate station at Mai Tung at km 124+200 including passing loops; (b) constructing additional passing loops (each with length of 480 m) at nine stations; (c) extending existing passing loops (minimum length of 450 m) at a further eight stations; (d) upgrading station facilities at North Yen Vien, Van Phu, Yuan Giao 'A', and Lao Cai; and (e) providing operational facilities at selected stations.
- (iv) **Safety component.** Improving rail–road traffic safety through a package of measures, including (a) building one road over rail intersection at an existing rail–road at-grade crossing at Dong Anh (km 20+700); (b) upgrading 44 existing at-grade crossings by providing improved track crossing structure for both motorized and pedestrian road traffic; and (c) at selected unauthorized at-grade rail crossing points, provide about 5.5 km of fencing and permanent rights-of-way to channel traffic towards official crossing points. The rail safety works would be supported by a public awareness campaign.
- (v) **Reform component.** (i) Institutional reforms related to the improvement of financial governance, and (ii) cross-border procedures at Lao Cai.¹¹

C. Special Features

24. **Subregional Context.** The railway from Yen Vien, near Hanoi, to Lao Cai on the border with the PRC is part of the Kunming–Hai Phong transport corridor, which is a strategic link in the GMS north–south corridor. Developing the transport corridor is a high-priority subregional

¹⁰ ADB. 2005. *Technical Assistance to the Socialist Republic of Viet Nam for Preparing the Greater Mekong Subregion: Hanoi–Lao Cai Railway Upgrading Project*. Manila.

¹¹ These components will be financed by proposed grant TA projects described in paras. 31 and 35.

transport project under the GMS Economic Cooperation Program, which aims to develop efficient multimodal infrastructure links between the GMS countries.¹² The proposed Project will restore and expand the capacity of a long-established link between Yunnan province in the southwest of the PRC and the strategic port of Hai Phong in Viet Nam on the Gulf of Tonkin. Landlocked Yunnan province has a growing need for efficient transport routes to sea ports for the export of its goods.

25. The project railway line serves three primary purposes: (i) it will facilitate bilateral trade between Viet Nam and the PRC, which currently accounts for about 650,000 tons per annum (about 30% of current traffic on the line) and is expected to more than triple when the adjoining railway in the PRC is upgraded (possibly by 2011); (ii) it will increase international trade from the PRC via the container port in Hai Phong, which could realize traffic growth of 12-15% per annum when the GMS cross-border agreement comes into force at the Lao Cai/Hekou border crossing; and (iii) it will be an integral part of the Singapore–Kunming railway link, which may be completed by about 2015 with the construction of the final link between Phnom Penh and Ho Chi Minh City.

26. The Governments of Viet Nam and the PRC are keenly aware of the benefits of increased trade, and both are planning to upgrade their infrastructure and to promote cross-border and transit trade. The PRC is upgrading the railway line between Kunming and Hekou by constructing a new railway to replace the line that was built in the early 20th century. About 300 km are under construction and a decision on starting construction of the remaining 160 km to Hekou is expected in 2008 (subject to the findings of a feasibility study currently being carried out). A new expressway, which will end at the border, is under construction. In addition to upgrading the railway in Viet Nam, the Government is planning to build a new toll highway to connect with the expressway in the PRC at Lao Cai. Border crossing procedures have been eased in recent years by allowing trucks to cross into the border provinces on both sides of the border and by enabling new banking and insurance services to facilitate trade. The GMS Cross-Border Transport Agreement, which will streamline border crossing procedures, will be piloted at the Lao Cai/Hekou border crossing by mid-2007. Reforms to the provisions for rail traffic are required to ensure the smooth passage of freight between the two border stations. The Project will provide grant financing to address this issue.

27. **Safety Component.** In recent years, urban populations along the railway have increased considerably, leading to a large number of vehicles at railroad crossings. Under the safety component of the Project, a package of measures will improve the safety of rail and road users and the public living near the railway line. These include improvements to level crossings, construction of a flyover, and measures to check unauthorized track crossings by public vehicles. These measures will reduce the number of incidents at crossings.

28. **Operational Improvements.** Increasing the loads of trains by using more powerful locomotives will help to reduce the number of freight trains. This will conserve line capacity and defer costly infrastructure improvements. At present, such locomotives are not allowed on the Yen Bai–Lao Cai section because of the sharp curves, weak bridges, and worn and distressed track. Under the Project these constraints will be removed to enable heavier trains to be used.

29. A new signaling system will be installed with assistance from the PRC government. However, the current condition of the track means that, without the additional and extended passing loops, and the urgently needed track upgrading, the new system will have limited effect.

30. The Government and VNR have given assurances that the signaling and telecommunications works under the Project will be coordinated with those of the PRC signaling

¹² The fourth meeting of the Subregional Transport Forum in Vientiane agreed to develop the corridor by improving roads, railways, and inland waterways. This project has been specifically developed to support this strategy.

and telecommunications project in order to avoid duplication of work and to ensure efficient and economic implementation of both projects. ADB advised VNR that for compatibility of signaling on the route, the signaling component of the works at various stations under the Project should be implemented under the PRC signaling project. However, if the PRC signaling and telecommunications project cannot meet project requirements, the work will be incorporated into the design and scope of the Project.

31. AFD proposes to fund a TA to review railway cross-border traffic at Lao Cai/Hekou, identify bottlenecks, and recommend improvements (Appendix 4). The scope encompasses (i) a review of cross-border procedures for rail traffic and identification of the potential for streamlining, and (ii) a review of the handling of freight at the border, focusing on the handling of containers and other break bulk commodities. Container and break bulk commodities are currently transshipped at the border from road in the PRC to rail in Viet Nam (and vice versa) and will continue to require transshipment or reaxling at Lao Cai when the railway line in the PRC is upgraded to standard gauge. The focus of the review of freight handling will be on identifying possibilities for private sector involvement in container handling and container stuffing at Lao Cai.

32. **Tourism.** Hai Phong and Sa Pa in the project area are important tourist destinations in Viet Nam. Hai Phong is near to the World Heritage Site at Halong Bay, and Sa Pa mountain resort is accessed from the railway station at Lao Cai. The many tourists visiting both resorts provide much needed revenue to the local communities. In the case of Sa Pa (about 340 km from Hanoi), private tour operators have leased railway carriages from VNR and had them outfitted for luxury travel.

33. **Associated Reform Program.** The Government is reforming the railway subsector, with assistance from the Government of Germany through Gesellschaft für Technische Zusammenarbeit (GTZ). A new Railway Law¹³ has been drafted and has been in effect since 1 January 2006. The basic thrust of this reform is to allow private sector entities to take part in operations and some operational activities, such as onboard train services, will be outsourced. The reforms also aim to inject a commercial orientation into the administration of VNR. The German Government has decided to extend its support to the reform process to the end of 2008, and is in the process of developing an assistance program to (i) implement the new Railway Law by supporting the drafting of implementing guidelines and draft amendments to other related laws, and (ii) provide technical assistance to restructure VNR. However, before the new law and the restructuring can become operational, a number of existing laws have to be revised and new implementing rules worked out.

34. Many of these implementing guidelines can be prepared by VNR without outside assistance, but for several, including sequencing the reform steps, external expertise will be required. In addition to extending its support for the reform process, the German Government, through GTZ, will coordinate the reform process with the new donors in the railway subsector, including ADB and AFD. GTZ will help VNR to sequence the reform steps and is already assisting Saigon Passenger Company to set up a traffic costing system.

35. However, one major concern is the lack of an accounting and audit system that satisfies generally accepted accounting principles. Without a system that provides effective management information and enables efficient pricing and supply of railway services, private sector involvement and railway modernization in general will not be successful. ADB has engaged VNR in a dialogue aimed at enhancing financial management services through a two-stage approach. First, an 18-month design phase starting in 2007 will assess VNR's accounting and management information system, make proposals for internal audit and controller functions,

¹³ Law No.: 35/2005/QH11.

prepare a plan for implementation (including training and detailed arrangements for a phased transition to the new system), and pilot test of a limited, semi-automated version within VNR's freight operations. Second, a 3-year implementation phase will support a staged rollout of the new systems throughout VNR. AFD proposes to provide grant TA for the first phase of the reform program and ADB plans to provide advisory TA for the second phase in 2009–2011. The terms of reference for the Enhanced Financial Management Governance Reform Program are in Appendix 5.

36. Based on the sequencing of reform steps being developed by GTZ, ADB and GTZ have agreed to work closely together. Both parties, together with other interested donors, will meet with VNR twice a year as part of a railway reform consultation group, to take stock of the reform progress, recommend adjustments, and identify areas that need further attention and assistance.

D. Project Investment Plan

37. The project investment cost is estimated at \$160.0 million, including taxes and duties estimated at \$12.17 million equivalent (Table 1). The cost estimates are based on quantities derived from preliminary engineering designs and market prices for goods and materials, and include the costs of land acquisition and resettlement, and environmental mitigation and monitoring. Detailed cost estimates are in Appendix 6, including detailed cost estimates by financier.

Table 1: Project Investment Plan
(\$ million)

Item	Amount
A. Base Cost ^a	
1. Civil Works	39.13
2. Equipment and Track Renewal	85.39
3. Land Acquisition, Resettlement, and Social Mitigation	6.14
4. Environmental Mitigation and Monitoring	1.57
5. Consulting Services for Design, Supervision, and Administration	8.78
Subtotal (A)^b	141.01
B. Contingencies ^c	17.33
C. Financing Charges During Implementation ^d	1.66
Total (A + B + C)	160.00

^a In mid-2006 prices, excluding the TA projects referred to in paras. 31 and 35.

^b Includes taxes of \$12.17 million comprising VAT (10%) and other taxes (2%).

^c The physical contingencies are computed at 12% for civil works and track implementation, and 2% for track materials (because the quantities have been estimated based on track standards and are firm). Price contingencies are computed at international cost escalation of 2% per year for foreign costs and 5% per year for local costs.

^d Only includes ADB's capitalized interest.

Source: Staff estimates based on Feasibility Study by PPTA consultant.

E. Financing Plan

38. The Government has requested a loan of \$60.0 million from ADB's Special Funds resources with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; a term of 32 years, including a grace period of 8 years to help finance a portion of the Project costs. The Government has also sought a loan from AFD of €32.0 million (approximately \$40.0 million equivalent), and a loan from DGTPE of €30.0 million (approximately \$37.5 million equivalent) in the form of a tied overseas development assistance (ODA) credit (Table 2). Conditions and arrangements for AFD cofinancing will be through a bilateral financing agreement to be negotiated between the Government and AFD after approval of the loan in December 2006. A cofinancing agreement will be entered into by ADB and AFD

under which the parties will jointly finance the civil works and consulting services. The remaining costs, estimated at \$22.5 million equivalent, will be met by the Government from its own resources. DGTPE financing will be through parallel cofinancing using a loan from the Emerging Countries Facility (ECF).

Table 2: Financing Plan
(\$ million)

Source	Total	%
ADB	60.0	37.5
AFD	40.0	25.0
DGTPE	37.5	23.4
Government	22.5	14.1

ADB = Asian Development Bank, AFD = Agence Française de Développement, DGTPE = Treasury and Economic Policy General Directorate of the French Ministry of Finance. Source: ADB estimates.

F. Implementation Arrangements

1. Project Management

39. VNR will be the Executing Agency (EA) for the Project. The Railway Project Management Unit (RPMU), a unit within VNR, will be responsible for day-to-day project implementation. RPMU has been involved in project preparation and PPTA implementation. It will be expanded and qualified technical, financial, and support staff will be recruited for project management and implementation. ADB will be advised of the composition of RPMU and the competencies of the individual members as soon as its expansion is complete. ADB will provide training in procurement and project management to technical staff of VNR and RPMU. RPMU, acting on behalf of and under the authority of VNR, will be responsible for overall implementation of the Project, including procurement, withdrawal of loan proceeds, and reporting to ADB and the cofinanciers.

2. Implementation Period

40. The Project will be implemented over a period of about 5 years for completion in June 2012. The Government has been granted advance procurement, allowing recruitment of consultants to begin during the first quarter of 2007 for appointment when the ADB loan is declared effective, scheduled for March or April 2007. A period of about 24 months is envisaged for detailed engineering design, prequalification, preparation of bid documents, and tendering of the works up to the stage of contract award. The implementation schedule is in Appendix 7.

3. Procurement

41. The procurement, financed from the ADB and AFD loans, will be done in accordance with ADB's *Procurement Guidelines*. Civil works contracts have been packaged according to three subsections of the project route. Each package will include all works on the subsection, including track, bridges, realignment, embankment stabilization, station upgrading, and safety works. The civil works contracts will be procured by international competitive bidding (ICB) among prequalified bidders. The procurement of the DGTPE-financed package of rails, track switches, and fittings will be undertaken in accordance with the Government of France's procurement rules.¹⁴ Other supply contracts that are not expected to exceed \$100,000 in value will be procured through shopping. A list of proposed contract packages is given in Appendix 8.

¹⁴ The French intergovernmental loan facility called ECF (Emerging Countries Facility) is managed by DGTPE.

Relevant sections of ADB's anticorruption policy¹⁵ will be included in all bidding documents and contracts.

42. ADB has approved the Government's request for advance action for procurement of civil works to enable the EA to make preparations for construction of civil works according to the implementation schedule. The Government was advised that, as per ADB's procedures, advance action includes all procurement activities up to the stage of contract award. The Government was also advised that approval of advance action does not commit ADB to finance the Project.

4. Consulting Services

43. The Government will engage an international consulting firm supported by national consultants for detailed project design, preparation of technical specifications and bid documents, construction supervision, and quality assurance. Additional responsibilities include environmental supervision and management, updating, implementation and monitoring of the resettlement plan, socioeconomic impact assessment, and project performance monitoring. It is envisaged that 200 person-months of international consultants and 524 person-months of national consultants will be required. The terms of reference for the international consultants for design and supervision can be found in Supplementary Appendix A. International consultants for the Project will be recruited using the quality- and cost-based method and a full technical proposal in accordance with ADB's *Guidelines on the Use of Consultants*. The Government was advised that, for the recruitment of consultants, advance contracting is the normal procedure and that ADB's support of advance contracting does not commit ADB to approve the loan project or to finance the recruitment costs.

5. Anticorruption Policy

44. ADB's anticorruption policy (footnote 13) was explained to and discussed with the Government and the EA. Consistent with its commitment to good governance, accountability and transparency, ADB reserves the right to investigate, directly or through its agents, any alleged corrupt, fraudulent, collusive, or coercive practices relating to the Project. To support these efforts, relevant provisions of ADB's anticorruption policy (footnote 13) are included in the loan regulations and the bidding documents for the Project. In particular, all contracts financed by ADB and AFD in connection with the Project will include provisions specifying the right of ADB and AFD to audit and examine the records and accounts of the EA and all contractors, suppliers, consultants, and other service providers as they relate to the Project. In addition and to ensure transparency and good governance, VNR will publicly disclose on its website information on how the loan proceeds are being used, presenting procurement contract awards, including for each such contract the (i) list of participating bidders, (ii) name of the winning bidder, (iii) basic details on bidding procedures adopted, (iv) amount of the contract awarded, (v) list of goods and/or services purchased, and (vi) intended and actual utilization of loan proceeds under each contract. The website will be updated within 2 weeks of each award of contract.

6. Disbursement Arrangements

45. All disbursements under the ADB and AFD loans will be carried out in accordance with the ADB *Loan Disbursement Handbook*.¹⁶ Since most of the payments will be made for contracts well above \$200,000, direct payment procedures will be used to withdraw the loan funds. The statement of expenditure procedure will be used to reimburse eligible expenditures for any individual payment not exceeding \$100,000 per contract. Disbursements under the DGTPE loan will be carried out in accordance with the financing guidelines for loans under the

¹⁵ ADB. 1998. *Anticorruption Policy*. Manila.

¹⁶ ADB. 2001. *Loan Disbursement Handbook*. Manila.

ECF of the French Ministry of Finance. VNR will open an imprest account at a commercial bank acceptable to ADB. The initial deposit will be \$2.0 million.

7. Accounting, Auditing, and Reporting

46. The VNR will maintain separate accounts for the Project and have such accounts and related financial statements audited annually by an external auditor in accordance with auditing standards acceptable to ADB and AFD. VNR will submit to ADB and AFD, within 6 months of the end of each fiscal year, certified copies of such audited project accounts and financial statements and auditor's reports, all in English. The audit of such financial statements will include (i) an assessment of the adequacy of accounting and internal control systems with respect to project expenditures and other financial transactions; (ii) an assessment of compliance with financial loan covenants and ADB and AFD requirements for project management; (iii) an opinion on the use of the statement of expenditure procedure (if applicable); and (iv) an opinion on the use of the imprest account. The VNR will also submit its audited financial statements covering income statements and balance sheets during construction and in the first 3 years of commercial operations of the project railway within 6 months of the end of each fiscal year.

47. The RPMU, on behalf of VNR, will make satisfactory arrangements for reporting the progress of project implementation by submitting quarterly progress reports through VNR. The form and content of the progress reports will be agreed with ADB and AFD. RPMU will monitor project implementation in accordance with the implementation schedule, and will keep ADB informed of any significant deviations from the schedule. The quarterly report will summarize the information in the detailed reports, including basic data, utilization of funds, achievement of immediate development objectives, compliance with covenants, implementation progress, land acquisition, resettlement progress, and major issues and problems. Within 3 months of physical completion, RPMU will submit through VNR a project completion report to the cofinanciers, which will provide a detailed evaluation of the project design, costs, contractors' and consultants' performance, social and economic impact, economic rate of return and such other details as may be requested by ADB and AFD. In addition, within 3 months of each loan closing date, a loan completion report will be provided.

8. Project Performance Monitoring and Evaluation

48. A set of indicators for evaluating project performance in relation to its impacts, outcomes, outputs, and conditions will be agreed to by VNR, ADB, and AFD before Project approval. The data will be collected within 6 months of the date of loan effectiveness, including among others (i) economic development and socioeconomic indicators, (ii) transport costs and times for passenger and freight services, (iii) transport services and transport charges, (iv) accident rates, (v) financial sustainability of the rail sector, (vi) affected persons' incomes, (vii) access to social services, and (viii) jobs created in construction and maintenance.¹⁷ At the beginning of project implementation, RPMU and the VNR will establish baseline and target values for the indicators. The indicators will be measured and compared with the baseline at project inception, completion, and after 3 years. Where relevant, indicators will be disaggregated by gender. The project supervision consultant services will include qualified consultants to help establish the monitoring and evaluation system, and train VNR staff in its use. The main sources of data will include (i) secondary data from government sources, (ii) a household socioeconomic sample survey, and (iii) participatory rapid appraisal. VNR will submit a report summarizing the key findings of monitoring at inception, completion, and 3 years after physical completion of the Project to ADB and AFD.

¹⁷ The PPTA consultants will define baseline indicators for performance of the railways, as well as the targets to be achieved after Project completion.

9. Project Review

49. In addition to annual regular reviews by ADB and AFD, the Government, ADB, and AFD will jointly undertake a midterm review of the Project in mid-2009 to assess (i) implementation status, (ii) design and construction standards, (iii) performance of consultants and contractors, (iv) project impacts, (v) progress of sector reform, (vi) status of compliance with the covenants stipulated in the loan agreements, and (vii) the need for any changes in the project scope or schedule to achieve the Project impact.

IV. PROJECT BENEFITS, IMPACTS, ASSUMPTIONS, AND RISKS

A. Traffic Forecast

50. The traffic forecast is based on a multimodal transport study, completed in 2005,¹⁸ and updated under the PPTA. The study evaluated likely demand for passenger and freight traffic in the corridor Hai Phong port–Hanoi–Lao Cai/Hekou–Kunming between 2005 and 2025, and the likely distribution of traffic between railway and road in the corridor subject to alternative scenarios for future infrastructure development.

51. The study forecasted that there would be substantial traffic growth to 2025, with freight volumes expected to increase by a factor of 2.8 to 3.6 by 2020, reflecting high economic growth in Viet Nam and the PRC, as well as an expected rapid modernization of transport systems, especially increased use of containers. Capacity analysis shows that at the forecast traffic growth, the railway's capacity, assuming a reasonable service level, will be exhausted within 3–4 years. The proposed project will enable the railway to fully meet forecast traffic demand until 2020.

B. Economic Benefits

52. The proposed project will enable the operation of longer and heavier trains, which will be required to realize the increased capacity of the railway line when upgraded. The Government has advised that VNR has enough rolling stock to use the increased capacity on the project line and that VNR is in the process of receiving 36 high-horsepower locomotives that fully meet the traffic requirements of the railway line after it has been upgraded. The Government has assured its partners that sufficient rolling stock and high-horsepower locomotives will be available to utilize the capacity of the upgraded railway line. The Government's assurance is reflected in a loan covenant.

53. Preliminary economic analysis indicates that the project is likely to generate an economic internal rate of return (EIRR) of about 16.1%. The main sources of benefits are the (i) avoided cost of forced diversion to road transport due to insufficient railway capacity, (ii) operating cost savings for the railway due to operation of heavier trains, (iii) reduced wear and tear on rolling stock due to the replacement of worn-out rail, and (iv) reduced future infrastructure maintenance costs due to rehabilitation of track and structures. The economic analysis is in Appendix 9.

C. Subregional Benefits

54. The Project will have substantial subregional benefits arising from increased trade between northwestern Viet Nam and Yunnan province of the PRC and from transport cost savings. The Project will improve transport from Kunming to Hai Phong port, which is closer to Kunming than ports in the PRC and thus more attractive to container traffic. The distance from Kunming to Hai Phong port is about 250 km less than that from Kunming to Fangcheng port in the PRC. Hai Phong's container traffic in 2004 was 800,000 twenty-foot equivalent units (TEU) and the total cargo volume was 30 million tons, while the corresponding figures for Fangcheng

¹⁸ ADB 2005. *Technical Assistance for the Socialist Republic of Viet Nam for a Multimodal Transport Study on the Kunming–Haiphong Transport Corridor*. Manila.

were 125,000 TEUs and 14 million tons. In addition, Hai Phong is expected to continue to have greater frequency of services and diversity of destinations than Fangcheng in the future. By improving access to Hai Phong, the Project will provide benefits to producers of industrial and agricultural exports in Yunnan province.

D. Financial Benefits

55. The financial analysis indicates that, at current fare levels, the project will be financially viable with a financial internal rate of return (FIRR) of 3.0%. This FIRR is well over the real weighted average cost of capital (WACC) of 0.54%. Loan covenants will be included, requiring (i) the Government to implement track user charges as appropriate to secure full cost recovery for the Government's debt service obligations, and (ii) VNR's total revenue to be at least equal to its total operating expenses, including the Government's appropriate track user charges. The financial analysis is in Appendix 10.

E. Environmental Impact and Assessment

56. **Environmental Classification.** The proposed Project has been classified as environment category B, meaning an initial environmental examination (IEE) is required. The IEE has been prepared according to ADB's environment policy¹⁹ and its requirements. The summary IEE is included in Appendix 11.

57. To ensure that the Project will result in minimal environmental impacts, the following construction and operation issues have been carefully examined and control measures have been included in the environmental management plan (EMP): (i) disposal of excess earthworks, and increased soil erosion rates in disturbed areas; (ii) wastewater generation from work camps, workshops and stations; (iii) dust, noise and gaseous emissions; (iv) solid waste disposal; (v) soil liquefaction in mountainous regions; (vi) impacts on terrestrial and aquatic resources; (vii) public health and safety; and (viii) spillage of hazardous materials during transport. Institutional responsibilities and associated costs for EMP implementation were also addressed in the IEE. To strengthen the EA's capacity to address the environmental issues of railway construction and operation, technical assistance for environmental management will be provided to the EA and the RPMU, as well as to other subordinate institutes of the Ministry of Transport, in 2007.

F. Social and Gender Impacts

58. The Project has been designed to minimize potential risks. A socioeconomic survey covering all sections of the project railway and all project components was conducted during the PPTA. The project impacts were assessed along with potential associated risks. The social analysis indicates that 93.2% of the people affected by the Project are Kinh (i.e., ethnic Vietnamese) and 6.8% are from ethnic minorities. The ethnic minority groups living in the project area are Tay, Hmong Xa Pho, and Dao and they live together with the Kinh in mixed settlements in towns. They are integrated into the urban lifestyle in terms of employment in the formal and informal sectors, housing, and schools. The ethnic minorities do not have separate cultural and social organizations to retain their traditional livelihood systems. The socioeconomic survey indicated that the Project is not expected to have any adverse effect specific to these non-Kinh groups. Thus, ADB's policy on indigenous peoples²⁰ is not triggered, and an ethnic minorities development plan is not required. However, to ensure that ethnic groups are not marginalized during the process of resettlement, specific activities targeted at ethnic minorities are included in the resettlement plan.

59. The Project may increase the potential for the spread of HIV/AIDS and other sexually transmitted infections because of the influx of workers during construction. This potential risk will

¹⁹ ADB. 2002. *Environment Policy*. Manila.

²⁰ ADB. 1998. *The Bank's Policy on Indigenous Peoples*. Manila.

be mitigated by a program to increase the awareness of local communities and the workforce. Some concern has also been expressed on the possible impact of the Project on the increase in human trafficking from the provinces of Vinh Phuc, Phu Tho, and Yen Bai and along the border of Lao Cai and the PRC. The Project is not expected to contribute to this as cross-border rail traffic is restricted to freight. Given the seriousness of this problem, however, an awareness program on human trafficking will be prepared in conjunction with a leading NGO active in this area, and included at different phases of project implementation.

60. The social and gender strategy in the summary poverty reduction and social strategy (Appendix 12) includes a strategy for participatory resettlement activities. The gender strategy will include training for staff from RPMU and other relevant agencies and leaders from the affected people to enable effective implementation of resettlement, livelihood activities, and social safety net programs, and training of female leaders of the commune and mass organizations (Women's Union and Youth Union) to increase their participation in implementing HIV/AIDS and human trafficking prevention.

61. The consultants will be required to assist RPMU in implementing the gender strategy, and an HIV/AIDS and human trafficking awareness program. A national consultant will be recruited for 6 person-months for this purpose.

G. Resettlement Impact

62. A full resettlement plan has been prepared. It is estimated that about 591 households (2,378 persons) will be affected by the rehabilitation of the railway. There are 411 households in the project area. Of these, 128 will be required to relocate and 88 will lose more than 10% of their agricultural land. The two proposed resettlement sites will accommodate 180 households. These households will be prioritized together with the 90 households that will relocate from Lao Cai station. The main objective of the resettlement plan will be to avoid, and if that is not possible to minimize, resettlement. It will be updated and disclosed to affected people before it is submitted to ADB for further review and approval. The summary resettlement plan and the project's detailed entitlement matrix are in Appendix 13.

H. Risks

63. The main risks to the Project are related to the traffic forecasts, particularly for international traffic between Viet Nam and the PRC. Realization of the forecast of international traffic is dependent on the successful implementation of the GMS Cross Border agreement at the Lao Cai/Hekou border crossing, scheduled for 2008. The commitments of the governments to implement the border-crossing agreement and continued ADB and AFD assistance in this area will mitigate this risk. Furthermore, AFD proposes to finance on a grant basis a specific study on railway traffic at Lao Cai border crossing. This will analyze the current situation and propose some procedural and physical measures to facilitate traffic and transit exchanges which will complement those carried out under the implementation of the GMS Cross Border agreement. Delays in implementing the PRC's plans for the new railway line between Kunming and Hekou could have a negative impact on the project railway's international traffic, with a corresponding impact on the Project's economic and financial viability and subregional benefits. However, the many examples of successful railway projects in the PRC indicate that this risk is slight. Traffic levels on the railway could also decrease if diversion of traffic to the new highway exceeds predictions. However, because of the different types of traffic carried by the railway and road, the diversion is not expected to exceed estimates. Associated technical assistance to VNR from ADB, AFD, and GTZ will mitigate this risk.

V. ASSURANCES

A. Specific Assurances

64. In addition to the standard assurances, the Government and VNR have given the following assurances which are incorporated in the legal documents:

65. **Financial Performance.** The Government will ensure that VNR utilizes technical assistance, to be made available under the Project, to optimize the Project's economic benefits and financial returns, including updating VNR's financial management system into a structure suitable for a modern, commercial, market-based railway operation as envisaged under the Railway Law.

66. **Financial Statements.** The Government will ensure that VNR prepares financial statements of operations showing the VNR's actual position. The financial statements will comprise an income and expenditure statement and balance sheet.

67. **Supply of Rolling Stock.** The Government will ensure that VNR deploys sufficient rolling stock and sufficient numbers of high-horsepower locomotives, at all times, for effective operation of the Project railway line.

68. **Project Implementation.** As the civil and track works under the Project are to be carried out while trains are operating on the project route, the Government will ensure that VNR takes all necessary measures, including adjustment of train composition, schedules, and operational speeds, when necessary, to facilitate implementation of works on and adjacent to the track in accordance with the agreed implementation schedule.

69. **Signaling and Telecommunications.** The Government will ensure that the extensions to the existing passing loops and new passing loops at stations under the Project are implemented in coordination with the ongoing signaling works to ensure efficient and economic implementation of the Project.

70. Safeguard Issues

- (i) **Resettlement.** The Government will ensure that VNR: (a) engages resettlement and gender specialists to assist in updating, implementing and monitoring the resettlement plan and an independent monitor before any land acquisition activities begin; (b) does not begin any land acquisition and relocation activities or any works until the updated resettlement plan has been prepared and approved by ADB; and (c) carries out all resettlement activities in accordance with the updated resettlement plan agreed by the Government and ADB. The resettlement plan will be prepared in compliance with ADB's policy on involuntary resettlement²¹ and the laws, regulations, and procedures of Viet Nam. In case of differences between the Government's laws, regulations, and procedures and ADB's policy requirements, ADB's policy requirements shall prevail.
- (ii) The Government will ensure that the people affected by the project, including those from the host community, are compensated at replacement cost and assisted before they are displaced from their houses, land, and assets, so they will be at least as well off as they would have been in the absence of the Project. The poorest people affected by the project and vulnerable groups, including people from ethnic minorities, will be assisted so they can improve their socioeconomic status. No affected people will be displaced until suitable alternative land within the same or neighboring commune is allocated to them or compensation is paid that is sufficient to purchase suitable alternative land within the same or neighboring commune.

²¹ ADB. 1995. *Involuntary Resettlement*. Manila.

- (iii) The Government will ensure timely provision of counterpart funds for resettlement to meet any unforeseen obligations in excess of the resettlement budget estimates in order to satisfy resettlement requirements and objectives.
- (iv) VNR will ensure that works contractors are not issued a notice of possession for a geographic area until (a) compensation payment and relocation to new sites has been satisfactorily completed for that area, (b) agreed rehabilitation assistance is in place, and (c) the area is free of all encumbrances.
- (v) **Indigenous peoples and ethnic minorities.** The Government will ensure that, to the extent that any ethnic minorities are likely to be significantly affected by the Project, the measures set forth in the specific actions in the resettlement plan related to ethnic minorities, and as agreed between the Government and ADB are carried out in accordance with such actions, applicable laws and regulations of the Government and ADB's policy on indigenous peoples (footnote 20).
- (vi) **Social issues.** VNR will ensure that all works contracts under the Project incorporate provisions and budgets to the effect that contractors (a) comply with all applicable labor laws and related international treaty obligations and do not employ child labor; (b) provide safe working conditions for male and female workers; (c) implement the provisions set forth in the gender strategy for the project; and (d) carry out HIV/AIDS and human trafficking education and awareness campaigns involving women's leaders and youth from households affected by the project, the Women's Union, and the Youth Union, with such campaigns being held in coordination with government's programs and other initiatives.
- (vii) **Gender.** District resettlement committees established according to the resettlement plan shall include representatives from the district Women's Union. Commune resettlement committees established according to the resettlement plan will include representatives from the commune Women's Union, as well as female representatives from affected households, including those from households headed by women, and women from ethnic minority households. VNR will ensure there are capacity building training programs for district and commune resettlement committee members, as well as female representatives from affected households, including households headed by women and women from ethnic minority households in order to provide, among other things, detailed information on resettlement activities, such as proposed relocation sites, entitlements, compensation and livelihood strategies for income improvement for affected persons, and grievance procedures.
- (viii) The Government will ensure that VNR (a) prepares a format for monitoring reports with monitoring indicators broken down by gender and ethnic group for purposes of monitoring and reports, and (b) conducts gender sensitization training on gender and resettlement for its relevant staff, the district-level and commune-level resettlement committees, and the Women's Union. In any instance where land is acquired for affected persons, the Government and VNR will ensure joint registration of land or land use rights in the name of both the husband and wife.

71. **Environment**

- (i) The Government will ensure that its laws and regulations governing environmental impact assessments, as well as ADB's environment policy (footnote 19), are followed. If there is any discrepancy between the Government's laws and regulations, and ADB's environment policy, the ADB policy requirements will apply.

- (ii) The Government will ensure that the contract documents for works under the Project include specific measures in accordance with ADB's environment policy to mitigate negative environmental impacts caused by the construction and to give due consideration to prevention of damage to the natural environment in the design, construction, operation and maintenance of the Project.
- (iii) The Government will ensure that VNR implements the EMP for the Project, based on the IEE, ensuring that it allocates adequate budget and staff resources for this. The Government will ensure that the Project complies with best environmental practices and meets the mitigation and monitoring requirements in a timely manner as described in the IEE. It will also ensure that there is no damage to the natural environment as a result of the design, construction, operation and maintenance of project facilities. The Government and VNR will cause (i) the contractors engaged under the works contracts to comply strictly with all environmental impact mitigation and monitoring requirements set out in the contract documents, and (ii) the consultants engaged for construction supervision to monitor closely compliance by the contractors with the environmental impact mitigation and monitoring requirements.
- (iv) The Government will ensure that VNR submits a semi-annual monitoring report on the conduct of the IEE and EMP to ADB for review, and that this report will include updates on the development and implementation of mitigation measures.

72. **Governance.** To ensure transparency and good governance, VNR will publicly disclose on its website information on how loan proceeds are being used, presenting procurement contract awards, including for each such contract the (i) list of participating bidders, (ii) the name of the winning bidder, (iii) basic details on bidding procedures adopted, (iv) the amount of the contract awarded, (v) the list of goods and/or services purchased, and (vi) the intended and actual utilization of loan proceeds under each contract. The website will be updated within 2 weeks of each award of contract.

73. **Project Performance Monitoring and Evaluation**

- (i) VNR will implement a systematic project performance monitoring and analysis system for use throughout the project period. VNR will establish project indicators (baseline data) including: (a) economic development and socioeconomic indicators; (b) transport costs and times for passenger and freight services; (c) transport services and transport charges; (d) accident rates; (e) financial sustainability of the railway sector, (f) incomes of affected persons, (g) access to social services, and (h) jobs created in construction and maintenance. The data will be collected within 6 months of the date of loan effectiveness; a second survey will be conducted upon project completion; and a third survey 3 years after project completion to establish project impact. The baseline data will be gathered from (a) government sources, (b) household socioeconomic sample surveys, and (c) participatory rapid appraisals. Where relevant, indicators will be disaggregated by gender.
- (ii) The RPMU will (a) collect and consolidate all project progress reports, site reports, and technical and financial reports and submit them to ADB and AFD; (b) prepare quarterly progress reports, a midterm project evaluation report and an overall project completion report; and (c) prepare other reports as may be reasonably requested by ADB and AFD. Quarterly reports will include updated implementation, financial and procurement-related information, as well as reports submitted by the independent monitor for resettlement activities. Quarterly reports will be submitted to ADB and AFD within 30 days of the end of each quarter, as applicable.

B. Conditions for Loan Effectiveness

74. The following are conditions for loan effectiveness:
- (i) the Government will have concluded a financing agreement with AFD in an amount of approximately \$40.00 million,
 - (ii) the Government will have concluded a financing agreement with DGTPE in an amount of approximately \$37.50 million, and
 - (iii) the project feasibility study will have been approved by the Government.

VI. RECOMMENDATION

75. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank and recommend that the Board approve

- (i) the loan in various currencies equivalent to special drawing rights 40,395,000 to the Socialist Republic of Viet Nam for the Greater Mekong Subregion Kunming–Hai Phong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading Project from ADB’s Special Funds resources with an interest charge at the rate of 1.0% per annum during the grace period and 1.5% per annum thereafter; a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan and Project Agreements presented to the Board; and
- (ii) the administration by ADB of a loan not exceeding the equivalent of \$40,000,000 to the Socialist Republic of Viet Nam for the Greater Mekong Subregion Kunming–Hai Phong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading Project to be provided by AFD under the terms of a Cofinancing Agreement to be entered into between ADB and AFD.

Haruhiko Kuroda
President

23 November 2006

DESIGN AND MONITORING FRAMEWORK

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Impacts Increased cross-border trade with Yunnan province in the PRC</p> <p>Accelerated economic growth in northern Vietnam.</p>	<p>Viet Nam–Yunnan province trade increases by 15% p.a. between 2011 and 2020</p> <p>GDP per capita in the project area outside Hanoi increases to 70% of the national average by 2020</p>	<p>Project completion reports</p> <p>Railway physical and financial performance reports</p> <p>Government statistics and accounts</p>	<p>Assumptions Rehabilitation and institutional reforms are completed as planned</p> <p>Continued commitment by the governments to regional cooperation</p> <p>Streamlined and efficient cross-border operation and no barriers to trading and travel by people</p> <p>Risk Downturn in economic growth</p>
<p>Outcome More efficient rail transportation system that will meet transport demand to 2020</p> <p>Financially sustainable railway operation</p> <p>Improved traffic safety</p> <p>Improved governance of Vietnam Railways (VNR)</p>	<p>The railway rehabilitation and upgrading works will be completed by 2011.</p> <p>The railway fully meets railway freight transport demand till 2020.</p> <p>Railway operation is commercially viable by 2015 and incremental revenues continue to be sufficient to meet debt service requirements of the rehabilitation loan</p> <p>Reduction in the number of accidents on the railway by 25% and on the adjacent roads by 10% by 2015</p> <p>All implementing decrees for the Railway Law in force by mid-2007. Modern accounting and management reporting systems deployed throughout VNR implemented in 2010.</p>	<p>Progress reports made by construction supervision consultants</p> <p>Reports of the review missions</p> <p>Post evaluation surveys</p> <p>Annual results of the railway's physical and financial performance</p> <p>Rail and road accident statistics</p> <p>Government accounts</p>	<p>Assumptions The PRC-assisted signaling project is completed on schedule.</p> <p>Government's commitment to railway reform</p> <p>Donor agencies agreeing to provide technical assistance for reforms</p> <p>Railway tariff will be set at full cost recovery level</p> <p>Risks Cross-border traffic may suffer if the existing meter gauge on the PRC side is replaced by a standard gauge railway</p> <p>Rail traffic does not materialize as per forecast</p>

Design Summary	Performance Targets/Indicators	Data Sources/Reporting Mechanisms	Assumptions and Risks
<p>Outputs</p> <ol style="list-style-type: none"> 1. Railway infrastructure rehabilitation and upgrading, along with all associated resettlement and social mitigation activities on Yen Vien–Lao Cai railway line 2. Agreed agenda for institutional strengthening for ensuring financial sustainability of railway operations 3. Agreed agenda for railway reform for facilitating the implementation of the Railway Law that seeks to provide opportunities for private sector participation in the development of railway infrastructure and operations 	<p>Realignment, embankment stabilization, track renewal, bridge building and repairs, building station facilities for upgrading line capacity, and safety works at level crossings are completed</p> <p>All affected people are compensated in full and on schedule</p> <p>Institutional strengthening consultants submit final report in June 2007 with recommendations on financial management and financial sustainability of VNR, and railway reform to enable implementation of the Railway Law.</p>	<p>Reports of the review missions</p> <p>Progress reports made by construction supervision consultants</p> <p>Mid-term review and project completion report</p> <p>Railway accounts, and user surveys</p> <p>Reports of consultants for institutional strengthening for financial sustainability of railway operations</p> <p>Reports of consultants for preparing implementing regulations for the Railway Law.</p>	<p>Assumptions</p> <p>Government implements the recommendations made by consultants for strengthening financial management and improving VNR's financial performance</p> <p>Continued support of the German Government to help VNR with reforms and preparation of implementing regulations</p> <p>Government's approval of implementing regulations for the Railway Law in a timely manner.</p> <p>Government's approval of the reform agenda for strengthening of financial institutions for ensuring sustainability, and VNR's implementation of the reform agenda in a timely manner.</p> <p>Risk</p> <p>Wavering of political support for reforms</p>
<p>Activities with Milestones</p> <ol style="list-style-type: none"> 1. Preliminary design of the project components: completed by July 2006. 2. Recruitment of consultant services for project design and supervision: ADB approval of advance action by August 2006; consultants recruited by June 2007; consultants fielded by July 2007; consultants' work completed by December 2011. 3. Recruitment of consultants for institutional strengthening: services to be started in April 2008 and completed by February 2010. 4. Detailed design and drawings of the project components, prequalification and bidding documents, civil works contracts awarded in October 2008. 5. Land acquisition and resettlement: started by January 2008 and completed by December 2009. 6. Civil works and track works, including realignment, stabilization of embankments, bridge rehabilitation, upgrading station facilities, and safety works: started in October 2008 and completed by June 2012. 			<p>Inputs</p> <p>ADB—\$60 million AFD—\$40 million (equivalent) DGTPE—\$37.5 million (equivalent) Government—\$22.5 million</p> <p>German Government – continued funding of ongoing program for railway reform through GTZ.</p>

ADB = Asian Development Bank, AFD = Agence Française de Développement, DGTPE = Treasury and Economic Policy General Directorate of the French Ministry of Finance, GDP = gross domestic product, GTZ = Deutsche Gesellschaft für Technische Zusammenarbeit, PRC = People's Republic of China, VIE = Viet Nam, VNR = Vietnam Railways.

SECTOR ANALYSIS

A. Transport Sector

1. The transport sector in Viet Nam consists of road; railway; inland water; international sea traffic through the ports of Ha Long, Hai Phong, Da Nang, and Ho Chi Minh City (HCMC); and domestic and international air traffic centered in Hanoi and HCMC. The transport infrastructure suffered severe destruction and degradation during more than three decades of war and its rehabilitation has been a primary goal of the Government. The Government's efforts are focused on (i) reconstruction of the road network, (ii) rehabilitation and upgrading of the railway system, together with reforms to improve efficiency and sustainability of operations, (iii) modernization and upgrading of international airports, and (iv) rehabilitation and modernization of the ports.

2. The Government of Viet Nam made investment in transport infrastructure a key priority in its 2001–2005 public investment program (PIP). This emphasis has been continued in the current PIP. Nationwide, freight and passenger demand measured in ton-km and passenger-km grew by 10% a year over the same period. While road remains the dominant mode of freight transport, accounting for 65% of tons moved, rail plays an increasingly significant role, particularly in the transport of bulk cargo over long distances.

B. Development of the Railway

3. Because of Viet Nam's topography and long distances, the railway plays an important role in providing economic, reliable and safe services for the transportation of people and goods. The railway is 2,600 kilometers (km) long and was mainly constructed in the early part of the 20th century using the French meter gauge ([MG] 1.0 meter [m]) railway. The first railway line in Viet Nam was built in 1881–1885 linking HCMC and My Tho town, a distance of 70 km. Construction of the longest railway line linking HCMC and Hanoi, a distance of 1,726 km, was completed over a period of 4 decades from 1899 to 1936.¹

4. The Vietnamese railway network links the main population, cultural, agricultural, and industrial centers. It connects with the PRC standard gauge railway network at Lang Son in the north-east and with the PRC MG network in the land-locked province of Yunnan at Lao Cai. The railway in Viet Nam forms a strategic link in the Greater Mekong Subregion (GMS) Transport Sector Strategy's southern and north south corridors,² which connects Malaysia, Thailand, Cambodia, and Viet Nam with the southern PRC. It is part of a plan to connect Singapore to Kunming by rail, which is a long-term development priority for the Association of Southeast Asian Nations (ASEAN).

5. During the Second World War, the rail system in Viet Nam suffered considerable damage, including destruction of bridges. Following the partition of Viet Nam in 1954, the railway system was also split. During the war in the 1960s and early 1970s, the railway system was again targeted. Unification of the country in 1975 saw the re-emergence of a unified railway system, much of which was badly damaged or inoperative.

C. Railway Infrastructure

6. The Vietnamese railway network has track gauges of 1.000 m (MG), 1.435 m (SG) and dual gauge (1.000 m and 1.435 m). The major routes are listed in Table A2.1.

¹ Construction of the HCMC to Hanoi railway line began in 1899 in three sections: Hanoi to Vinh, Dong Ha to Danang and Nha Trang to HCMC. The remaining two sections, Vinh to Dong Ha and Danang to Nha Trang were started in 1914 but the construction works were postponed until 1921 because of the First World War. The section from Vinh to Dong Ha was completed in 1927, and the last section from Danang to Nha Trang in 1936

² ADB. 2006. *GMS Transport Sector Strategy Study, Final Report*. Manila.

Table A2.1: Major Routes of Viet Nam Railways

Main Routes	Route Length (km)	Track Gauge (m)
Hanoi–Ho Chi Minh	1,726	1.000
Hanoi–Hai Phong	102	1.000
Hanoi–Lao Cai	296	1.000
Hanoi–Ha Dong	162	1.435/1.000
Hanoi–Quan Trieu	75	1,435/1.000
Kep Uong Bi–Ha Long	106	1.435
Luu Xa–Kep	57	1.435

km = kilometer, m = meter.

Source: Staff estimates based on Feasibility Study by PPTA consultant.

7. The main lines have a maximum speed of 70 km/hour. The track structure is generally 43 kg/m rails, and rails lighter than 38 kg/m section are still in use on about 10% of the main lines. The rails are laid on two-block concrete, wooden and steel sleepers with up to 300 mm of ballast, using predominantly rigid fastenings. Elastic fastenings are used on selected sections. Many bridges in the network were damaged during the war and have safety problems requiring trains to slow to 30 km/hour, and even 5 km/hour. Some railway tunnels let in water because of inadequate drainage and unstable tunnel lining and as a result trains have to reduce speeds as low as 15 km/hour.

8. Overall, the physical condition of the railway infrastructure varies from poor to less than satisfactory. Much of the network needs to be rehabilitated and upgraded to meet the demand for rail transport efficiently and cost-effectively.

D. Railway Organization

9. After unification in 1975, the railway network was centrally managed and operated by the Government's General Department of Railways. Railway production targets were set by the state. Low tariffs and the underdevelopment of other modes of transport led to large numbers of passengers. However, since railway revenue was insufficient to cover operating costs, the larger the volume of goods and passengers transported by rail the more money the railway lost. Railway subsidies became a huge burden on the state budget.

10. In 1986, the Government implemented its *doi moi* policy to change the centrally-planned and subsidized economy into a market-led economy with a socialist orientation and state regulation. One of the major policy objectives was to deregulate transport and restructure state-subsidized transport into independent, self-sustaining, and market-led entities without a need for government support. In the ensuing deregulated transport environment, the railway faced stiff competition from other modes of transport, particularly road transport.

11. In 1989, the General Department of Railways was reorganized into Duong Sat Viet Nam (Viet Nam Railways), a state-owned enterprise with a mandate to perform competitively in a market environment. Subsidies were to be gradually reduced. However, a rapid deterioration of the railway's finances in the 1990s drastically reduced the potential for profitable operations. The Government began a number of studies to reorganize the railway with the objective of reducing the burden on the state budget and improving the quality of services.

E. Reforms in the Railway Sector

12. The problems in the railway subsector arise from its history of central ownership. In the past, economic efficiency and sustainability of operations were not priorities. The railway was invested in and subsidized by the state. No efforts were made to upgrade the facilities to improve the quality of services to meet customer demands and as a result the overall level of railway transport technology, equipment, and system capacity cannot meet the demands of a

market economy. This underscores the need for urgent railway reform.

13. Since the 1990s the Government has taken various initiatives to reform the railways and in 1994 rail infrastructure was separated from operations.³ Since 1 January 1995, infrastructure management and operations have had separate financial accounts. Funding for infrastructure maintenance and renewals as well as investments was to be the Government's responsibility. Viet Nam Railways was to manage the infrastructure, meet the cost of its operations, and pay an infrastructure use charge to the Government. Acquisition of locomotives and rolling stock as well as their maintenance was the responsibility of Viet Nam Railways. At the same time the railway system was reorganized into four functional groups under the management of Viet Nam Railways.

- (i) Transport Group is responsible for managing and providing rail services in the respective regions and coordinating with the other regional rail transport enterprises.⁴ This group is accounting for as one entity.
- (ii) Industry and Construction Group is responsible for rolling stock production units and workshops, stone quarries and railway construction companies and enterprises. These are all independent entities, conducting their businesses according to the State Enterprise Law.
- (iii) Infrastructure Management Group is responsible for infrastructure management for bridges, track, telecommunications and signaling, and stations. These are all public utility enterprises funded by the state.
- (iv) Rail-Related Services Group is responsible for railway material and equipment import-export, consulting, tourism, and transport services enterprises.

14. The VNR headquarters, located in Ha Noi, supervises rail operations and the business activities of the three enterprises in the transport group. It is financially separated from the other groups. All services and goods supplied by the other groups to the transport group are transacted on the basis of commercial contracts.

15. Since 2000, at the request of the Government, the German Government has been providing assistance for railway reforms.⁵ The objective of these efforts has been to: (i) make railway operations more market-oriented and competitive; (ii) support an internal reorganization of the railway subsector to make operations more efficient and effective; and (iii) set up a legal framework for a liberalized railway market, allowing third party participation in railway activities. As a result of these efforts, in March 2003,⁶ the Vietnam Railways (VNR) was established as a state corporation operating in railway transport and related services based on the following division of responsibilities:

- (i) business activities of VNR were separated from state management of railways, which were assigned to the Viet Nam Railway Administration under the Ministry of Transport;⁷ and
- (ii) the freight and passenger businesses of VNR were separated in July 2003 into one nationwide freight company and two passenger companies, each with its

³ Prime Minister's Dispatch No. 46/VPCP dated 26 March 1994

⁴ The three regional rail transport enterprises that comprise the Transport Group are: (i) Railway Transport Enterprise No. 1 (Union 1) that manages and operates on the northern part of the network from the border with China to Dong Hoi; (ii) Railway Transport Enterprise No. 2 (Union 2) that operates on the central part of the railway network from Dong Hoi to Dieu Tri; and (iii) Railway Transport Enterprise No. 3 (Union 3) that operates the southern part of the network from Dieu Tri to HCMC.

⁵ This support was channeled through Gesellschaft für Technische Zusammenarbeit (GTZ) of Germany.

⁶ Prime Minister's Decision 34/2003/QD-TTg issued on 4 March 2003.

⁷ Government Decree 34/2003/ND-CP dated 4 April 2003.

own marketing structure and being assisted by GTZ to further improve its organizational structure and operating mechanisms.

16. **New Railway Law.** The German Government supported the new Railway Law that was passed by the Government in May 2005. The Railway Law⁸ took effect on 1 January 2006 and provides a legal framework for investment and rules on railway safety. It contains provisions designed to attract private investment in railway infrastructure and transportation services, similar to those in market economies. Although it was anticipated that the law would encourage domestic and foreign investment in the railway sector, none has been forthcoming,⁹ perhaps because regulations for implementing the law have not yet been issued.

F. Outlook for Future Railway Reform

17. Railway transport is an economic necessity if Viet Nam is to meet the demand for medium- to long-distance transport of goods and people. Because of environmental concerns associated with road transport as well as the rising oil prices, it is imperative that the country's railway system provides services to meet demand efficiently and cost-effectively. Given the physical condition of the railway infrastructure, this will require large investments from more than one source. A multi-pronged effort is necessary, including from multilateral financing institutions that can provide competitively-priced financing for railway development in poor areas. Conditions will need to be made attractive for private sector investment, with risks that compare favorably with those in other sectors. A start has been made with the promulgation of the Railway Law, but this will not be enough.

18. Another significant development in the near future will arise from Viet Nam's accession to the World Trade Organization. This will create a more enabling environment whereby foreign investors in the railway subsector will be treated in the same way as domestic investors. VNR will need to compete effectively in such an environment if it is to improve its financial performance.

19. Areas in which future urgent reforms are needed include the following.

- (i) The regulations for implementing the Railway Law should be made more specific. A one-stop service should be provided to private sector investors, domestic and foreign. The implication that the law will be valid for 10 years will limit its effectiveness as railway projects generally last longer than this. The future status of the law will need to be clarified for the benefit of investors.
- (ii) Considering the poor state of existing infrastructure and the large number of public service obligation services, it is likely that VNR will still require financial support from the state for some time to come, as in other countries (e.g., in France, Germany, and Japan railway companies have access to preferential financing to purchase rolling stock and develop infrastructure). The government should diversify sources for funding railway infrastructure by (a) permitting local governments to invest in building their own rail routes to foster economic growth in poor areas, and (b) issuing government bonds to attract funds for railway infrastructure development.
- (iii) Under the existing arrangement, VNR operates on state-funded rail infrastructure and pays a charge for infrastructure use at the rate of 10% of revenue. However, this user charge is not sufficient to cover the cost of infrastructure operation.

⁸ Law No. 35/2005/QH11.

⁹ Dao Dinh Binh, Minister of Transport and Communications, at the Seventh Session of the 11th National Assembly on 11 May 2005.

Financial sustainability will be assured only if the cost of operation is recovered through an appropriate charge.

- (iv) The railway will need to introduce a traffic costing model to calculate the economic efficiency of passenger business and freight business separately, by route and by specific commodities. The commercial viability of each route and specific service should be defined and operating expenses monitored and controlled. A flexible tariff structure will need to be based on the principle of full cost-recovery (including depreciation and a reasonable rate of return on investment). A cost accounting system for each business operation should be established. In the past, rail operations have not been costed separately for passenger and freight businesses or by line and/or by specific commodities, so there has been no sound basis for the economic analysis of operations.

20. Germany is continuing to assist the Government and VNR in railway sector reforms by (i) preparing regulations to implement the provisions of the Railway Law; (ii) preparing a proposal for a reorganization of the railway; (iii) establishing a basis for determining charges for the use of state-financed railway infrastructure, and a procedure for its collection; (iv) preparing regulations for evaluation, publication, and marking of land required for planned infrastructure for a state railway and urban railway network; (v) formulating health standards for train staff; (vi) drafting regulations for the examination, issuance, renewal and withdrawal of train driving licenses; (vii) drafting regulations for licensing construction works and other activities within railway works protection areas; and (viii) preparing regulations for the issuance of safety certificates to enterprises.

21. The Project will address the important issue of the financial sustainability of the operation of infrastructure and transportation services. The Government has committed to imposing an appropriate infrastructure use charge on VNR and other users of the tracks. The charge should be sufficient to cover costs, including the debt service requirements arising from the Project. From fiscal year 2007, VNR will be required to produce total revenues equivalent to, or not less than, the sum of its total operating expenses, including such user charges as are determined appropriate by the Government.

22. In association with the Project, technical assistance will be provided for the introduction of enhanced financial management accounting policies, procedures and internal controls, and also to establish revenue and cost-centre reporting systems. The outcome of the technical assistance will be an improved system of financial management accounts and internal control designed in accordance with international good-practice standards of financial reporting and control appropriate for a railway operating in a market economy. The enhanced system will provide reliable cost and revenue management information for timely decision-making.

23. Efforts in this direction will need to be continued by the Government and VNR, with possible assistance from bilateral and multilateral sources.

EXTERNAL ASSISTANCE TO THE RAILWAY SUBSECTOR

Project	Donor	Status	Duration
GMS: Hanoi–Lao Cai Railway	ADB	Preparation stage	2006–2010
Ho Chi Minh City Metro Rail	ADB	Preparation stage	Approval firm 2008
Rural Transport – Pilot Budget Support to Phu Tho and Lao Cai	DFID	Ongoing	2005-2006
Feasibility Study of Tramway Line on Road 32	France (MOF)	Completed	2004
Hanoi Pilot Metro Line	France (FFEM; AFD/MOF)	Ongoing	2006–2010
Modernization of Signaling in Northern Viet Nam	PRC	Ongoing	2006-2008
Modernization of signaling and telecommunications system of Hanoi-Vinh Railway	France (MOF)	Ongoing	2006–2009
Mechanization of track maintenance of Hanoi-Vinh Railway	France (MOF)	Ongoing	2006–2009
Viet Nam Railways Project	GTZ	Ongoing	2001–006
Hai Van Tunnel Construction Project	JBIC	Ongoing	2001–009
Hanoi–Ho Chi Minh City Railways Bridge Rehabilitation Project	JBIC	Completed	1994-2005
Hanoi–Ho Chi Minh City Railway Line Bridges Safety Improvement Project	JBIC	Ongoing	2004–2009
HCMC Urban Metro Railway Project	JBIC	Under preparation	2006–2010
Rehabilitation of 15 Main-Line Locomotives	KfW	Completed	1996–2000
Feasibility Study on Urban Railway System of Hanoi	KfW	Completed	1999–2000
Supply of Modern Railway Cranes	KfW	Ongoing	2000–2003
Main Line Locomotives	KfW	Ongoing	2001–2007
Viet Nam Railway Control Center	KfW	Under preparation	
Multimodal Transport Regulatory Review	WB	Draft final report	2005–2006

ADB = Asian Development Bank, AFD = Agence Française de Développement, DFID = Department for International Development, FFEM = Fonds Française pour l'Environnement Mondial, GTZ = Deutsche Gesellschaft für Technische Zusammenarbeit, HCMC = Ho Chi Minh City, JBIC = Japan Bank for International Cooperation, KfW = Kreditanstalt für Wiederaufbau, MOF = Government of France Ministry of Finance, WB = World Bank.

**PROPOSED AGENCE FRANÇAISE DE DÉVELOPPEMENT GRANT FINANCING FOR
IMPROVED FACILITATION OF TRANSIT TRAFFIC AT THE LAO CAI BORDER CROSSING
TERMS OF REFERENCE**

A. Introduction

1. The Yen Vien–Lao Cai Railway Upgrading Project in Viet Nam consists of increasing the capacity of the 285-km line by rehabilitating and upgrading tracks and bridges as well as by constructing and extending passing-loops at selected stations, based on traffic forecasts to 2020. A package of measures will be implemented to improve the safety of rail and road users and the public living near the railway line.

2. It is proposed that the Project be financed through an Asian Development Bank (ADB) loan from its Asian Development Fund resources in the amount of \$60 million, with cofinancing in the amount of \$40 million to be provided by Agence Française de Développement (AFD), and a tied overseas development assistance (ODA) credit in the amount of €30 million to be provided by Treasury and Economic Policy General Directorate of the French Ministry of Finance (DGTPE), another French bilateral source. An amount of approximately \$22.5 million equivalent will be provided from the Government's own resources.

3. The objectives of the stakeholders are to (i) assure the long-term viability of the national railway sector, and (ii) strengthen subregional integration in the Greater Mekong Subregion as a whole and more specifically within the integrated Kunming–Hai Phong transport corridor linking Yunnan province in the People's Republic of China (PRC) with Viet Nam and onward to the Gulf of Tonkin.

4. With regard to the long-term viability of the railway sector, the Vietnamese authorities and several donors are researching funding sources. The Project includes phased assistance for the establishment and implementation of a computerized management accounting system. The Project also contributes to subregional integration. In addition, however, it is proposed that the question of railway traffic passing through the Lao Cai/Hekou border stations be further studied, specifically in the context of forecasts of growing traffic between the two countries, current traffic disruptions (which result in long waiting times and therefore higher costs), and existing processes and customs agreements at the border. A conference in July 2006 in Hanoi attended by PRC and Vietnamese authorities and operators confirmed the importance of streamlining traffic and facilitating exchanges between Viet Nam and the PRC to increase trade and economic growth.

5. AFD proposes to finance this study on a grant basis. It is both a part of the railway line upgrading as a whole, and complementary to the upgrading works at Lao Cai station. This study is consistent with the Programme de Renforcement des Capacités Commerciales financed by the French Ministry of Economy and Finance and co-managed by the latter and AFD.

B. Scope and Objective

6. The proposed study is aimed at providing Vietnamese authorities, as well as their PRC counterparts, with the means and information necessary to make rational decisions on how to optimize the transport of goods by rail between the two countries. The study will address the situation at Lao Cai/Hekou border crossing, but the lessons may be adapted for use on the other Viet Nam–PRC rail border at Huu Nghi. The findings of the study will also contribute to future bilateral exchanges between the PRC and Viet Nam on rail policies.

7. The study aims to identify bottlenecks and recommend mitigation measures. It will have two phases. In phase 1, the existing situation at Lao Cai/Hekou border crossing will be reviewed

and the causes of delays exposed, including the main disruptions to unloading, physical, administrative and institutional processes, and constraints. In phase 2, proposals will be made.

C. Tasks

1. Phase 1: Review

8. The review will take place on both sides of the border. It will:

- (i) describe the traffic conditions and disruptions currently experienced at the border crossing, especially for railway traffic but for road traffic as well, by reviewing passenger traffic and handling of freight with particular focus on container traffic and break-bulk commodities;
- (ii) quantify the consequences of these constraints, in terms of time losses and related costs;
- (iii) review and analyse the existing agreements, regulations, documents necessary for exchanges at the border, including the 1992 Agreement and further protocols, laws or rules relating to working-rights in both countries, with a view to identifying their (a) status, (b) level (national, local), (c) dates of enforcement and expiration (d) subject matter (e.g., trade, transport, and working rights for drivers), and (e) in relation to transport regulations, describe document requirements and current controls on import and export of goods;
- (iv) identify the main causes of traffic disruption for major transported items, including: (a) physical causes, such as the existence of several points for customs and unloading of freight (consideration will be given to the construction of a container yard 1 km south of the current Lao Cai station) and (b) institutional and administrative causes, such as border crossing formalities and inspections for freight and passengers, restrictions on entry of transport units, technical standards for vehicles;
- (v) identify ongoing processes to facilitate transit at the border, including the GMS Cross-Border Transport Agreement dealing with road traffic; and
- (vi) identify any other contributing problems.

2. Phase 2: Recommendations and Proposals

9. Phase 2 will:

- (i) propose appropriate measures to facilitate trade, including (a) institutional and administrative measures, (b) physical measures, including communications systems (the consultant will work on a preliminary design basis, which will be expanded by consultants recruited for detailed engineering design and supervision of the implementation of the loan project); and (c) improving transshipment from road to rail at the border, identifying issues related to the upgrading to standard gauge in the PRC, and investigating the focus of freight handling, including the possibility of private sector involvement in container handling and container stuffing at Lao Cai;
- (ii) for each of the above items, describe: (a) how it will be implemented; (b) specific actions required and milestones; and (c) the consequences for each country, and the combined effect;
- (iii) propose several scenarios, each combining one or more of the measures in (i); and
- (iv) for the approved scenario (the approval process is still to be determined), propose ways and schedules for implementation.

D. Personnel Requirements

10. A consultant, preferably with experience in transport, trade facilitation, international customs, and cross-border agreements, will be recruited. The candidate will carry out desk research and fieldwork and will meet with national authorities. VNR will help the consultant to collect data; arrange interviews with railway, customs and local government personnel in Lao Cai; and assist in internal travel.

E. Deliverables

11. A report will be prepared after phase 1 and submitted to VNR and AFD. This report will provide initial findings and contain recommendations on moving to phase 2. In phase 2, a more in-depth evaluation of the findings will be made and agreement reached on the implementation of appropriate measures. These will be described in detail in a final report submitted after phase 2.

12. Depending on the reviews in phase 1, deliverables could be: (i) draft amendments to existing legislation and agreements to enhance private sector involvement in train operations; and (ii) a preliminary design for possible physical improvements (which will be an input for detailed design and implementation under the main investment works).

F. Estimated Time Frame and Assignments

13. The first phase of the study is expected to take 3 months.

G. Estimated Cost

14. Consultants' services are estimated at €100,000.

TERMS OF REFERENCE FOR ENHANCED FINANCIAL MANAGEMENT GOVERNANCE REFORM PROGRAM FOR VIETNAM RAILWAYS

A. Introduction

1. The Upgrade of the Railway Line between Yen Vien and Lao Cai Project will provide the physical framework required to meet rapidly growing demand for railway transport in north western Viet Nam and between Kunming in PRC and Hanoi and Haiphong in Vietnam. During project preparation, the Government requested and ADB and AFD have agreed to provide associated advisory technical assistance to optimize the economic benefits and the financial returns from the Project. Two technical assistance projects were identified during the course of project preparation: (i) the Financial Management Governance Reform Program for Vietnam Railways, which will modernize and transform the financial management system in Viet Nam Railways into a system that is suitable for commercial, market based railway operation as envisaged under the new Railway Law; and (ii) Improved Facilitation of Transit Traffic at the Lao Cai Border Crossing which will recommend on improvements in cross border traffic arrangements that would help to maximize the benefits enjoyed by Viet Nam and PRC from cross border railway transport.

2. Following the passing of the Railway Law and the reorganization of Vietnam Railways (VNR) into an infrastructure company and various operating companies, there is a need for stronger financial management accounting policies, procedures and internal controls, in an automated/computerized environment. The enhanced system should provide reliable cost and revenue management information for timely decision making and to safeguard the assets of the holding company and its operating companies. The availability of information on the financial position and operating profitability of VNR and its companies will enable VNR to compete more effectively in a market-oriented transport environment. The goal of the reforms is the establishment of a reliable automated financial management system. The Financial Governance Reform Program for the Viet Nam Railway Sector will take 5 years. Phase 1, implementing a system of accounts in accordance with generally accepted accounting principles and in a semi-automated finance and managerial accounting system, may be achievable within the first 2 years. Phase 2, full implementation of the enhanced system, including seamless automation of financial management databases with real-time data links between all organizational units of the VNR, will be a medium- to long-term goal.

B. Reforms – Phase 1

1. Scope and Outcomes

4. Phase 1 will focus on the first 2 years of the Program. The components will include (i) an analysis of the present financial management and control organization and its system of accounts; (ii) design of an enhanced financial management system in a semi-automated environment congruent to the organizational structure of the VNR; (iii) implementation on a pilot basis of the proposed system; and (iv) training. The outputs of component (i) will include a road map for the Program, including recommendations on (i) organizational structure (including internal audit), and (ii) human resource competencies and skills required within the financial accounting and internal audit and control units of the VNR. Components (ii) and (iii) will support VNR staff through the pilot implementation of the enhanced financial and managerial accounting system. They will include a re-evaluation of the assets and liabilities of the companies, including a revaluation of fixed assets and inventories, and a review of the contingent accounts, if any. Component (iv) training will be an underlying capacity building program of the TA.

5. The TA outcome will be an improved system of financial management accounts and internal control designed in accordance with international good practice standards of financial reporting and control as appropriate for a railway operating in a market-oriented economy, implemented on a pilot basis. It is expected that Phase 1 will cost an estimated \$600,000 and will be implemented over a period of 18 months. Consultancy services will be provided by a firm (preferably an association between an international accounting and auditing firm and a Vietnamese accounting and auditing firm). It will require 15 person-months of international consultants and 36 person-months of national specialists.

2. Terms of Reference of the Consulting Firm

7. The consulting firm will: (i) review the organization of VNR with regard to its relationships with its subsidiaries and the separation of infrastructure from operations from a financial management perspective and within the context of the new Railway Law and its implementing decrees; (ii) conduct a management audit of VNR, including a review of the effectiveness of its financial organization with regard to business units, profit centres and cost centres; (iii) review the system of control over cash receipts and disbursements, accounts receivables and payables, fixed assets and inventories, including the existence of registers, supporting documentation and control accounts, and reconcile the book values with the control accounts in the general ledger; (iv) evaluate assets and obligations, such as fixed assets, inventories, liabilities (including contingent liabilities) to ascertain whether the book values are realistic; (v) review the system of financial planning, budget preparation, control, and budget execution; (vi) review internal audit activities if any, and make recommendations for the establishment of regular internal audits and controls; (vii) review the system of independent external monitoring controls, such as activities of the external auditors and state auditors, audits of financial statements and audit reports for public disclosure; (viii) prepare recommendations for the introduction of appropriate good-practice systems in the abovementioned areas, items (i) to (vii); (ix) develop a semi-automated management accounting system appropriate to the needs of VNR in a market economy, establish local and wide area network connections enabling frequent (say hourly but not necessarily real-time) replication between a centralized accounts database at VNR and decentralized accounts databases at VNR subsidiaries using inexpensive off-the-shelf components and software, and design and implement training programs for staff. The system shall reflect the structure of the VNR; and (x) in the pilot implementation phase, assist VNR staff to set up the approved financial and management accounting system, establish revenue and cost center reporting systems, and engage in extensive consultation with the VNR, the Ministry of Transport and other government agencies before finalizing the financial management system.

3. Consultant Competencies

a. International Accounting Specialist and Team Leader (12 person-months, intermittent)

8. This senior financial management specialist must have experience in carrying out management and financial audits. He or she must have a professional designation as a chartered accountant or its equivalent and must have a demonstrated successful track record of designing and developing financial management systems in an automated environment in the railway sector. The specialist should have at least 15 years' experience (at least 10 years of which should be appropriate international experience, preferably in a developing economy). He or she will be the team leader for the TA project and will provide not only the technical expertise, but also the project management and supervisory skills required to move a team of international and national experts. He should be proficient in database software systems.

b. International Automation Specialist (3 person-months, intermittent)

9. This senior automation specialist must have proven experience in designing and implementing financial management and database systems, preferably for the railway sector. He or she should be knowledgeable of the available cost-effective tools which can be used to further the automation efforts in the VNR. He or she will provide direct technical support to the Team Leader in as far as automation aspects of the project. Once the system is put in place, he will provide training to VNR staff on its use.

c. National Accounting and Auditing Specialists (24 person-months, intermittent)

10. These two national accounting and auditing specialists should be graduates in accounting and/or auditing, with at least 5 years' experience. They should be proficient in English and preferably have work experience in international organizations. They should be proficient in software systems.

d. National Automation Specialist (12 person-months, intermittent)

11. The national automation specialist must possess the ability to customize and implement off-the-shelf software(s) to meet the specific management information system needs of the VNR. He or she should have a proven record of producing quality programs/systems for service companies (preferably in the transport sector). He or she will support the work of the International Automation Specialist. He or she should be proficient in English and preferably have worked in an international organization.

4. Deliverables

12. The deliverables are as follows: (i) An assessment of the existing management accounting system, financial accounts, and organization of VNR, and a road map for financial governance reform, which should be a time-bound action plan, sequencing the activities and interdependencies, and the estimated cost of carrying out the proposals contained in the road map; (ii) An organizational plan appropriate to an effective management information system, including draft terms of reference and job descriptions for the financial accounting, internal audit and control departments and their staff. If required, advisory assistance will be provided to VNR in the realignment of certain departments within the VNR in order to implement the system; (iii) Development and implementation (on a pilot basis) of an enhanced semi-automated financial control and management system. A training program, including workshops to create awareness of the new financial management system, in the operational and support units in VNR. A diagnosis of the accounting and finance skills of VNR staff will be carried out and will form the baseline indicators by which the effectiveness of the training program will be assessed by the end of the TA; and (iv) An inception report within 1 month from fielding of the consultant team, outlining its initial diagnosis, its proposed approach to the project and a time-bound schedule of activity for the TA project. Semi-annual progress reports during the duration of the project; a draft final completion report circulated 1.5 months prior to end of the project; and a final completion report issued at end of the project. All reports should be discussed in consultation with VNR and ADB.

5. Estimated Cost**Table A5.1: Costs (\$'000)**

Cost Component	Foreign Cost	Local Cost	Total Cost
1. Consultants			
a. Remuneration			
International (15 person-months, intermittent)	270.00		270.00
National (36 person-months)		72.00	72.00
b. Per Diem			
International Consultants in Viet Nam	54.00		54.00
National Consultant travelling out of Hanoi		12.00	12.00
c. Travel			
International Travel (5 round trips)	20.00		20.00
Domestic Travel (3 round trips per consultant)		7.50	7.50
2. Workshops, Conferences, and Seminars	5.00	15.00	20.00
3. Communication and Reproduction/Translation	5.00	5.00	10.00
4. Software and Equipment (computers, servers, and printers)	65.00		65.00
5. Contract Negotiation	3.00		3.00
6. Contingencies	60.00	6.50	66.50
Total	482.00	118.00	600.00

Source: ADB estimates.

C. Reforms – Phase 2**1. Scope, Activities and Outcomes**

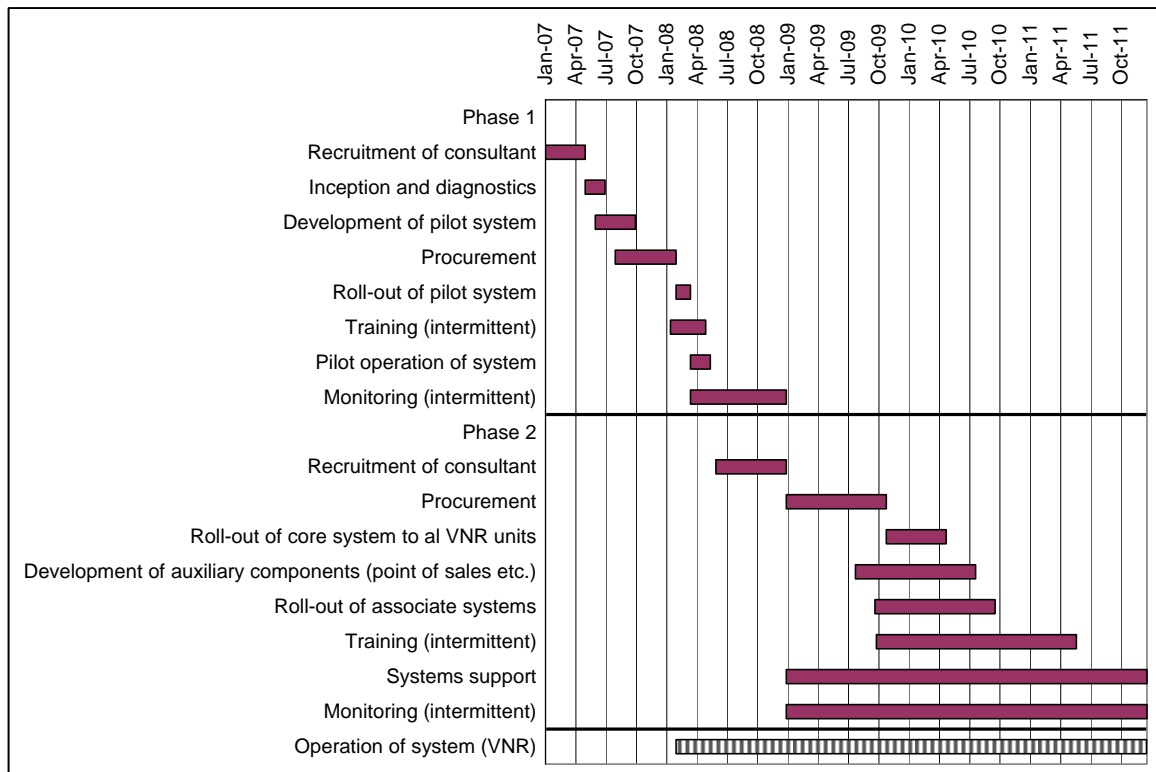
13. To extend the pilot implementation during phase 1, phase 2 will roll-out the Financial Management Governance Reform Program to the entire VNR organization. Lessons learned in phase 1 will be applied and the system improved and modified, taking into account the impact of changes in the Vietnam railways regulatory environment over the initial 18 months phase 1 period. Significant investments will be needed in computer infrastructure, the continuing evolution of business processes, and in human resource capacity development.

14. Activities will include a reassessment and stocktaking of the achievements of phase 1, and of implementation difficulties and gaps which will need to be addressed in phase 2. The post-evaluation of phase 1 will assist in refining a time-bound detailed action plan for phase 2. The extensive nature of phase 2 will require a minimum 3-year implementation period. Given the comprehensive scope of phase 2, intensive donor coordination will continue to ensure that the phase 2 program remains valid vis-à-vis each donor's area of support within the overall framework and context of VNR institutional reforms and railway sector private sector reforms. It is expected that the long-term goal of the Program of providing a reliable, transparent, and succinct financial management system for timely and informed decision making by VNR and the Ministry of Transport will be achieved after implementation of phase 2.

D. VNR Commitments

15. VNR will establish a finance working group of about 10 full-time VNR employees who will participate fully and actively in the process of developing and implementing Phase 1. The members of the finance working group will be representatives of the departments involved in the financial management system. After having been involved in the planning and conceptual process, these staff will be in a position to implement the new system. The finance working group will be headed by a senior member of staff from VNR who will be able to provide information and discuss problems directly with the management of VNR. This group should also be able to carry out detailed assignments, such as listing fixed assets, taking inventory, and similar tasks and be able to answer specific questions relating to railway matters. The cost of the finance working group (such as remuneration of its members) will be borne by VNR. The consultants will be given full and prompt access to accounting and organizational information. VNR will make available to the consultants clean air-conditioned and furnished office accommodation (with internet and communication facilities), printing, and photocopying facilities for the duration of the Program.

Tentative Implementation Schedule – Phase 1 and 2



DETAILED COST ESTIMATES

Table A6.1: Detailed Cost Estimates by Expenditure Category

Item	Foreign Cost	Local Cost	Total Cost	% of Total Cost
A Investment Costs^a				
1. Civil Works, of which	15.34	20.41	35.75	22.3
a. Realignment and Embankment Stabilization	1.81	5.52	7.33	
b. Bridges	5.95	5.49	11.44	
c. Stations	4.97	4.97	9.94	
d. Safety	2.11	4.93	7.04	
2. Equipment-Track Renewal	63.22	14.80	78.02	48.8
3. Land Acquisition, Resettlement and Social Mitigation	0.28	5.33	5.61	3.5
4. Environmental Protection	0.28	1.15	1.43	0.9
5. Consultants for Design, Supervision, and Administration	5.62	2.41	8.03	5.0
6. Taxes	0.00	12.17	12.17	7.6
Total Base Cost (A)	84.24	56.77	141.01	88.1
B. Contingencies^b				
1. Physical	5.82	4.13	9.95	6.2
2. Price	4.49	2.89	7.38	4.6
Subtotal (B)	10.32	7.01	17.33	10.8
C. Financing Charges During Implementation^c				
Interest During Implementation	1.66	0.00	1.66	1.0
Subtotal (C)	1.66	0.00	1.66	1.0
Total Project Cost (A+B+C)	96.21	63.79	160.00	100

^a In mid-2006 prices excluding the TA projects referred to in paras. 31 and 35.

^b The physical contingencies are computed at 12% for civil works and track implementation, and 2% for track materials (because the quantities have been estimated based on track standards and are firm). Price contingencies are computed at international cost escalation of 2% per year for foreign costs and 5% per year for local costs.

^c Only includes ADB's capitalized interest.

Source: Staff estimates based on feasibility study by PPTA consultant.

Table A6.2: Detailed Cost Estimates by Financier
(\$ million)

Item	Total Cost \$	ADB		AFD		DGTPE		Government	
		\$ ^a	% of Cost ^b	\$	% of Cost	\$	% of Cost	\$	% of Cost
A. Investment Costs									
1. Civil Works, of which	35.75	21.45	60	14.30	40	0.00	0	0.00	0
a. Realignment and Embankment Stabilization	7.33	4.40	60	2.93	40	0.00	0	0.00	0
b. Bridges	11.44	6.86	60	4.58	40	0.00	0	0.00	0
c. Stations	9.94	5.96	60	3.98	40	0.00	0	0.00	0
d. Safety	7.04	4.22	60	2.82	40	0.00	0	0.00	0
2. Equipment-Track Renewal	78.02	24.35	31	16.24	21	37.43	48	0.00	0
a. Equipment-rails and switches	37.43	0.00	0	0.00	0	37.43	100	0.00	0
b. Track Renewal	40.59	24.35	60	16.24	40	0.00	0	0.00	0
3. Land Acquisition, Resettlement, and Social Mitigation	5.61	0.00	0	0.00	0	0.00	0	5.61	100
4. Environmental Protection	1.43	0.86	60	0.57	40	0.00	0	0.00	0
5. Consultants for Design and Supervision, and Institutional Strengthening and Administration	8.03	4.82	60	3.21	40	0.00	0	0.00	0
6. Taxes	12.17	0.00	0	0.00	0	0.00	0	12.17	100
Total Base Cost (A)	141.01	51.48	37	34.32	24	37.43	27	17.78	13
B. Contingencies (B)	17.33	6.86	40	5.68	33	0.07	0	4.72	27
C. Financing Charges During Implementation (C)	1.66	1.66	100	0.00	0	0.00	0	0.00	0
Total Project Costs (A+B+C)	160.00	60.00		40.00		37.50		22.50	
% Total Project Costs	100	37.50		25		23.40		14.10	

ADB = Asian Development Bank, AFD = Agence Française de Développement, DGTPE = Treasury and Economic Policy General Directorate of the French Ministry of Finance.

^a Amount of ADB loan proceeds allocated to the cost category.

^b The amounts disbursed by ADB for eligible expenditures under a cost category will be subject to the ceiling set by the allocation of loan proceeds for such a cost category.

Source: Staff Bank estimates.

IMPLEMENTATION SCHEDULE

Tasks	Financial Year																											
	2006				2007				2008				2009				2010				2011				2012			
	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV
ADB and Government Project Processing	■																											
Loan Effectiveness				■																								
Consulting Services																												
(i) Design and Supervision																												
- Recruitment (Advance Action)					■	■	■	■																				
- Services									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
(ii) Institutional Strengthening																												
- Recruitment									■	■	■	■																
- Services												
Civil Works																												
Procurement of Civil Works and Supply Contracts									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
(i) Civil and Track Works between Yen Vien and Doan Thuong (Km 10.90 to 114.75)													■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
(ii) Civil and Track Works between Doan Thuong and Lam Giang (Km 144.75 to 225)																	■	■	■	■	■	■	■	■	■	■	■	■
(iii) Civil and Track Works between Lao Cai and Lam Giang (Km 225 to 296.05)																					■	■	■	■	■	■	■	■
Land Acquisition, Resettlement and Social Mitigation									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Environmental Protection									■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Project Administration Activities																												
Project Review																				
Midterm Review																												
Loan Closing																												■

Km= kilometer.
Source: Asian Development Bank estimates.

PROCUREMENT PLAN

Project Information	
Country	Socialist Republic of Viet Nam
Name of Borrower	Socialist Republic of Viet Nam
Project Name	Greater Mekong Subregion Kunming-Hai Phong Transport Corridor: Yen Vien–Lao Cai Railway Upgrading Project
Loan Reference	to be determined (tbd)
Date of Effectiveness	tbd
Amount \$	\$60 million
Of which Committed, \$	0
Executing Agency	Vietnam Railways
Approval Date of Original Procurement Plan	14 November 2006
Approval of Most Recent Procurement Plan	14 November 2006
Publication for Local Advertisements ¹	2nd Quarter 2007
Period covered by this Plan	December 2006–May 2008

Procurement Thresholds, Goods and Related Services, Works, and Supply and Install

Procurement Method²	To be used (\$)
International Competitive Bidding (ICB) Works	above \$1,000,000
ICB Goods	above \$500,000
National Competitive Bidding (NCB) Works	above \$100,000, below \$1,000,000
NCB Goods	above \$100,000, below \$500,000
Shopping Works	less than \$100,000
Shopping Goods	less than \$100,000

Procurement Thresholds, Consultants Services

Procurement Method	To be used (\$)
Quality- and Cost-Based Selection (QCBS)	\$200,000
Consultants' Qualifications Selection (CQS)	\$100,000–\$200,000
Least-Cost Selection (LCS)	Below \$100,000

¹ General procurement notice, invitations to prequalify and to bid, calls for expressions of interest.

² For international competitive bidding (ICB), the Asian Development Bank (ADB) will conduct prior review of all procurement documents, the bid evaluation report (BER), and award of contract. For national competitive bidding (NCB), the first draft English language version of the procurement documents should be submitted for ADB review and approval regardless of the estimated contract amount. ADB-approved NCB procurement documents should be used as a model for all NCB procurement financed by ADB, and will not be subjected to further review unless required under special arrangements. For NCB, ADB will review the BER and award of contract on post-facto basis.

List of Contract Packages, Goods, Works, and Consulting Services

Ref	Contract Description	Estimated Cost (\$ million)	Procurement Method	Expected Date of Advertisements	Prior Review Y/N	Comments
Lot 1	Civil works and track works between Yen Vien and Doan Thuong (Km 10.90–Km 144.75 [133.85 km])	29.0	ICB	2nd Quarter 2008	Y	Jointly Financed by ADB and AFD
Lot 2	Civil and Track works between Doan Thuong and Lam Giang (Km 144.75–Km 225 [80.25 km])	36.0	ICB	2nd Quarter 2008	Y	Jointly Financed by ADB and AFD
Lot 3	Civil works and track works between Lao Cai and Lam Giang (Km 225.0–Km 296.05 [71.05 km])	35.0	ICB	2nd Quarter 2008	Y	Jointly Financed by ADB and AFD
Lot 4	Supply of rails, track switches, and fittings	37.5	DGTPE Guidelines ¹	2nd Quarter 2008	Y	Financed by DGTPE
Lot 5	Various packages of goods each of value less than \$0.1 million	0.1	Shopping	2nd Quarter 2008	Y	Jointly Financed by ADB and AFD
CS 1	International Consultant for Design and Supervision	8.5	QCBS	2nd Quarter 2007	Y	Jointly Financed by ADB and AFD

ADB = Asian Development Bank, AFD = Agence Française de Développement, CS = consulting services, DGTPE = Treasury and Economic Policy General Directorate (DGTPE) of France's Ministry of Finance, km = kilometer, Ref = reference, Tbd = to be discussed, Y/N = yes/no.
Source: ADB estimates.

¹ Procurement to be guided by DGTPE guidelines limited to French contractors.

ECONOMIC ANALYSIS

A. The Proposed Project

1. The proposed Project would rehabilitate an existing 285 kilometers (km) railway line between Yen Vien station near Hanoi and Lao Cai station on the border with the People's Republic of China (the PRC), and upgrade its capacity to meet forecast demand for railway traffic until year 2020. The line is single track meter gauge. In Yen Vien, the railway line connects with the main north–south railway line between Hanoi and Ho Chi Minh City (HCMC), and with the railway line to Hai Phong port. From Lao Cai the line continues across the border to Hekou and from there to Kunming in Yunnan province in the PRC where it connects with the main railway network in the PRC. Signaling and traffic control on the Project railway line is being upgraded under a project funded by the PRC. The signaling project and ADB's proposed capacity upgrade project would be coordinated by Viet Nam Railways Administration (VNRA), the owner of the project railway line. In the PRC, a new toll expressway between Kunming and Hekou is under construction and expected to be completed by 2010. A proposed project financed by ADB and others may construct a toll highway between Hanoi and Lao Cai, where it would connect with the expressway in the PRC. The proposed new highway would run parallel to the project railway line. The economic analysis assumes that the highway between Hanoi and Lao Cai is completed in 2015.

B. Cost Benefit Analysis

2. The cost benefit analysis estimates the incremental costs and benefits to shippers, passengers, and the railway itself by comparing with and without project scenarios. The analysis includes quantifiable externalities. The analysis assumes that there are no capacity constraints at Yen Vien Station or on the railway lines beyond that station, especially the line to Hai Phong.

3. The “with project” case assumes that implementation of the Project is completed by 2011. It also assumes that trains will use high-horsepower locomotives. The locomotives are not included in the investment cost, since it is assumed they will be taken from a fleet of 36 high-power locomotives currently being acquired by VNR. The “with” and “without” project scenarios both assume that the signals project funded by the PRC is in place. Hence, the cost of providing the signals component is ignored in the investment budget and the benefits flowing from operational improvements associated with the signaling project are included in forecast operational costs and benefits in the “without” Project calculation.

4. The analysis is based on costs and benefits calculated in fixed 2006 economic border prices and are expressed in terms of the proposed project's economic internal rate of return (EIRR). The forecast traffic and mode-dependent operating cost for the highway in Viet Nam, and the expressway and the railway in the PRC, are based on data and analysis provided in the PPTA consultant's report, which also provides data on recent and future train operations and the operational costs and benefits of the railway line. Pertinent assumptions are tested by sensitivity analysis. The distributional impact of the proposed project is analyzed qualitatively.

C. Traffic Forecast

5. The project railway line is one of the busiest in Viet Nam and its importance is growing in step with rapidly increasing trade between Viet Nam and the PRC. The line is also becoming a conduit for containers to and from Yunnan province via Hai Phong port. The port in Hai Phong is attractive for container traffic to and from Yunnan province because it is the largest container port in northern Viet Nam and the southern PRC and is also the nearest port to Kunming. Hai Phong is 850 km from Kunming while the nearest container port in the PRC, Fangcheng port, is about 1,100 km away. Hong Kong is more than 2,000 km from Kunming.

6. Currently the project railway line carries about 2 million tons of freight and more than 2 million passengers annually on its busiest sections, which is close to capacity. It is forecast that demand for railway traffic will double in the next 10 years. Without an upgrade, there will be serious congestion by 2010 at the latest. Forecast demand for railway traffic with and without the proposed Project is summarized in Table A9.1. Realized traffic would, however, be lower because of capacity constraints. In the without project case the existing railway would be incapable of meeting demand in full after 2010 at the latest. In the with project case capacity would be adequate until year 2020.

7. The Ministry of Railways (MOR) in the PRC is constructing a new standard gauge railway between Kunming and Mengzi, which is a station on the existing railway line between Kunming and the border with Viet Nam at Lao Cai/Hekou. MOR plans to carry out a feasibility study for the continuation of the new standard gauge line from Mengzi to Hekou. If constructed, the new standard gauge line would upgrade railway services between the PRC and Viet Nam significantly, but it would also introduce a break-of-gauge at the border, where railway traffic between Kunming and Viet Nam would require reloading or reaxling. The traffic study has analyzed this prospect and found that the improvements to the railway services in the PRC would more than offset the impediments to traffic from the break-of-gauge at the border. The net result is that cross-border railway traffic would increase significantly. The impact on the Project of upgrading the railway between Hekou and Kunming is reviewed in the cost–benefit analysis. Two cases are evaluated: with and without upgrade of the railway in the PRC. Project evaluation is based on combining these two results to estimate the expected mean level of net benefits under the assumption that there is 50% probability that the new line to Hekou will be constructed.

Table A9.1: Forecast Demand for Railway Traffic between Yen Vien and Lao Cai

Development Alternative and Traffic		2005	2010	2015	2020	2025	2030
Without upgrade in the PRC ^a	Passengers (million passengers)	1.4	1.8	2.3	2.9	3.7	4.6
	Freight (tons)	2.1	3.8	5.4	7.6	8.5	9.5
With upgrade in the PRC ^b	Passengers (million passengers)	1.4	1.8	2.4	3.0	3.7	4.6
	Freight (tons)	2.1	3.8	9.0	12.8	14.3	15.9

^a Assumes construction of the new expressways in Viet Nam and the PRC.

^b Assumes construction of the new expressways in Viet Nam and the PRC, upgrade of the railway in Viet Nam and 50% probability that the railway in the PRC is upgraded.

D. Infrastructure Costs

8. The proposed railway project would rehabilitate and increase the capacity of the existing railway line, improve safety at busy road crossings, and secure the railway line in areas prone to landslides and river erosion. The main components of the project are (i) improving the track to enable operation of high horsepower locomotives, reducing future maintenance costs, and reducing track-related irregularity; (ii) rehabilitating or replacing bridges to enable operation of high horsepower locomotives; (iii) extending stations by lengthening existing crossing loops and providing additional crossing loops and stacking capacity; and (iv) improving safety at level road crossings. The investment costs of the proposed railway project are summarized in Table A9.2.

Table A9.2 Break-Down of Investment Cost in fixed 2005 prices
(\$ million)

Item	Financial Cost			Economic Cost	Remarks
	Foreign	Local	Total		
Civil Works	13.3	20.6	33.9	31.9	Converted to border prices
Improved Road Crossings	2.0	7.2	9.2	8.9	Converted to border prices
Equipment - track renewal	61.3	14.8	76.1	66.9	Converted to border prices
Land Acquisition and Resettlement	0.3	4.9	5.2	5.2	Not converted
Environmental Mitigation	0.3	2.1	2.5	2.4	Converted to border prices
Consulting Services and Administration	5.6	3.8	9.4	9.4	Not converted
Contingencies	10.3	7.0	17.3	15.8	Converted to border prices
Total Project Cost	93.0	60.5	153.5	140.4	

Note: Financial costs are exclusive of interest during construction, inclusive of taxes and contingencies and net of the scrap value of the rails replaced by new rails under the project.

Source: TA consultant's report.

E. Benefits and Operational Costs

9. Project benefits consist of saved cost for passengers, shippers and the railway, benefits from generated railway traffic benefits from avoiding forced diversion of freight traffic from rail to more expensive road transport because of capacity constraints on the railway line, and benefits from the reduced cost of maintaining the track and rolling stock as a result of replacing worn down rails with new high-tensile rails. Mode dependent user costs for passengers and freight traffic were obtained from the PPTA consultant's report, which provides economic (border price) long-term marginal vehicle- and train-operating costs by traffic type. The unit cost estimates are summarized in Table A9.3.

Table A9.3: Economic Unit Operating Costs and Passenger Time Costs

Case	Mode	Unit	Passenger time cost (\$0.01/unit)	Vehicle Operating Cost (US cent/unit)		Total Cost (\$0.01/unit)
				Time	Distance	
Without Project	Car	Passenger-km	0.72	3.50	6.65	10.16
	Bus	Passenger-km	0.35	0.51	0.70	1.21
	Truck	Ton-km		2.16	3.77	5.93
	Freight Train	Ton-km		0.33	1.85	2.18
With Project	Car	Passenger-km	0.72	3.50	6.65	10.16
	Bus	Passenger-km	0.35	0.51	0.70	1.21
	Truck	Ton-km		2.16	3.77	5.93
	Freight Train	Ton-km	0.00	0.28	1.60	1.88
Freight traffic savings	Railway operating cost (without - with project)	Ton-km		0.05	0.25	0.30
	Saved diversion to road (road – rail)	Ton-km		1.88	2.17	4.05

Source: TA Consultant's report.

F. Results

10. The cost-benefit analysis assumes that (i) the toll highway is constructed, (ii) the signaling project financed by the PRC is in place, and (iii) sufficient numbers of high-horsepower locomotives are available when needed. The upgrade of the railway line between Mengzhi in the PRC and the border was uncertain at the time of writing. Disregarding the upgrade to reach

the border generates an economic internal rate (EIRR) for the Project of 15.7%. If, on the other hand, it is assumed that the line is upgraded at the earliest possible time and opens for traffic in 2012, the EIRR is 16.6%. The mean expected value of the Project's net benefits is estimated at 16.1%. The cost and benefit flows are in Table A9.4.

Table A9.4: Cost-Benefit Analysis
(\$ million)

Year	Incremental transport costs and benefits					Net Benefits without Upgraded Railway in the PRC	Net Benefits with Upgraded Railway in the PRC opened in 2012	Mean Expected Net Benefits
	Investment Cost	Saved Transport Costs ^a		Saved Infrastructure Maintenance Cost	Road Safety Benefits			
		Without Upgrade in the PRC	With Upgrade in the PRC					
2007	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	(46.8)	0.0	0.0	0.0	0.0	(46.8)	(46.8)	(46.8)
2009	(46.8)	0.0	0.0	0.0	0.0	(46.8)	(46.8)	(46.8)
2010	(46.8)	0.0	0.0	0.0	0.0	(46.8)	(46.8)	(46.8)
2011	0.0	6.3	6.3	1.4	0.2	7.9	7.9	7.9
2012	0.0	8.6	8.9	1.4	0.2	10.2	10.6	10.4
2013	0.0	11.3	12.6	1.4	0.2	12.9	14.3	13.6
2014	0.0	14.5	17.8	1.4	0.3	16.1	19.5	17.8
2015	0.0	18.2	25.0	1.4	0.3	19.9	26.7	23.3
2016	0.0	21.5	28.1	1.4	0.3	23.2	29.8	26.5
2017	0.0	25.2	31.6	1.4	0.3	26.9	33.4	30.1
2018	0.0	29.4	35.6	1.4	0.4	31.2	37.3	34.2
2019	0.0	34.2	39.9	1.4	0.4	36.0	41.7	38.9
2020	0.0	39.7	44.8	1.4	0.4	41.5	46.6	44.1
2021	0.0	41.3	45.5	1.4	0.4	43.1	47.3	45.2
2022	0.0	42.9	46.1	1.4	0.4	44.7	48.0	46.3
2023	0.0	44.5	46.7	1.4	0.5	46.3	48.6	47.5
2024	0.0	46.1	47.3	1.4	0.5	48.0	49.1	48.6
2025	0.0	47.8	47.8	1.4	0.5	49.7	49.7	49.7
2026	0.0	49.5	48.2	1.4	0.5	51.4	50.2	50.8
2027	0.0	51.3	48.6	1.4	0.5	53.2	50.6	51.9
2028	0.0	53.0	49.0	1.4	0.6	55.0	51.0	53.0
2029	0.0	54.8	49.3	1.4	0.6	56.8	51.3	54.0
2030	0.0	397.1	357.3	(11.7)	5.4	390.8	351.0	370.9
NPV	(100.4)	140.2	150.7	5.8	1.9	47.4	58.0	52.7
EIRR						15.7%	16.6%	16.1%

EIRR = economic internal rate of return, PRC = People's Republic of China, NPV = net present value;

^a Includes savings on maintenance of rolling stock.

Source: Asian Development Bank estimates based on technical assistance consultant's report.

11. The Project's sensitivity to risks and changes in assumptions was tested by modifying the following variables (i) delay in completion of civil works by 1 or 3 years, (ii) investment costs increased by 15%, (iii) benefits reduced by 15%, (iv) world oil prices reduced by 33%—to the levels prevailing in the second half of 2004—and early closure of the project railway line if a new railway line south of the Red River replaces it in 2025, which is the earliest possible date. Switching values, defined as the change required to bringing the EIRR of mean expected net benefits to 12% have also been calculated. The sensitivity analysis shows that the delay in project implementation would have little impact, reflecting the long-term nature of capacity-related benefits which are only fully realized when traffic approaches the new capacity limit. The

switching value for implementation delay is about 7 years. The project is moderately sensitive to increased investment costs and reduced benefits. The switching values are a 52% increase in investment costs and a 34% decrease in benefits. Oil prices have been volatile in recent years and generally have a significant impact on transport costs. However, for this project the impact is minor: reducing oil prices by 33% to the levels prevailing in late 2004 reduces the mean EIRR to 14.6%. The switching value is a reduction by 81%, equivalent to the price prevailing in 1994-1995. Early closure of the railway line in 2025, which VNR considers the earliest time a new standard gauge line between Yen Bien and Lao Cai can realistically be in operation, reduces the mean EIRR to 13.2%. The switching value is closure in 2023, 12 years after project completion. All sensitivity tests produce an EIRR in excess of 12%, irrespective of whether the railway line in the PRC is replaced by a new standard gauge line to the border or not. The results are in Table A9.5.

Table A9.5: Sensitivity Analysis

Parameter	Change	Net Benefits without the PRC Upgrade (%)	Net Benefits with the PRC Upgrade opened in Year 2011 (%)	Mean Estimated Net Benefits (%)	Switching Value
Base		15.7	16.6	16.1	n/a
Project Delayed (years)	1 3	15.3 14.3	16.2 15.1	15.7 14.7	7
Investment cost (%)	15	14.3	15.1	14.7	52
Benefits (%)	(15)	14.1	14.9	14.5	(34)
Oil Prices (%)	(33)	14.2	15.0	14.6	(81)
Early closure (year)	2025	13.0	14.5	13.8	2023

() = negative, PRC = People's Republic of China.

Source: Asian Development Bank estimates based on technical assistance consultant's report.

12. The project has been subjected to risk analysis involving all the variables tested in the sensitivity analysis. The risk analysis shows 89% probability that the project will achieve an EIRR of 12% or more.

G. Distributional Impact

13. The project will primarily enable increased railway freight traffic, which has little direct impact on people living in the project area. There would be minor increases in effective travel speeds and improved regularity of train operations, which would have a direct, positive impact on train passenger and freight users. These improvements are, however, small and will not significantly affect train users. More broadly, improved and increased freight train operations reduces the general cost of freight transport, thereby enabling lower consumer prices and improving Viet Nam's international competitiveness. In turn, this would promote economic growth that would create new jobs and income opportunities. The improved railway would increase the attractiveness of locating economic activities in the project area relative to elsewhere, which in time would generate additional economic growth and additional job opportunities in the project area.

FINANCIAL PERFORMANCE, ANALYSIS, AND PROJECTIONS

A. Historical Financial Performance of Vietnam Railways (VNR)

1. Although audits were performed in 2004 by an independent audit firm, only 28 of 59 Vietnam Railways (VNR) subsidiaries were audited. Included in the subsidiaries, which were not audited, are the 21 companies involved in infrastructure. The balance sheet shown in Table A10.1 thus gives a very general indication of the overall financial position of the VNR. Before 2003, the railway was organized on a regional basis and no consolidated figures are available. The 2005 audits are underway and are being performed by the State Audit Authority of Vietnam. As indicated in the financial management assessment of VNR (Supplementary Appendix B), the effort to bring the accounting system to a level where meaningful information is produced will be considerable and will be well into the period of the Project.

2. The asset section of the balance sheet shows that VNR receives considerable subsidies to offset the tariffs presently in force. The amount of these subsidies was about \$30 million at the end of 2004. If VNR is to be run as a commercially-oriented enterprise, these subsidies will have to be reduced and finally removed.

3. The equity section shows reserves for infrastructure development and fixed assets procurement amounting to over \$600 million, which represents funds received from government sources. These two items account for over 80% of VNR's equity, which shows that the railway is not able to accumulate funds from its regular activities and will be dependent on government support for the foreseeable future.

Table A10.1 Balance Sheet
(\$ millions)

Year	2003	2004
Assets		
Current Assets		
Cash	23.6	33.8
Accounts Receivable from Customers (Net)	45.7	43.9
Receivables from Related Companies	75.4	116.4
Inventory	38.8	38.8
Administrative subsidies	31.0	29.7
Other Assets	36.8	24.3
Total Current Assets	251.2	286.9
Fixed Assets (net)	794.3	823.3
Long-term Investments	2.4	3.6
Total Assets	1,048.0	1,113.8
Liabilities		
Current Liabilities		
Short-term loans	22.6	23.1
Current portion of long-term loan	7.5	10.4
Accounts payable	30.7	41.9
Taxes and social payments	16.1	16.5
Liabilities to related companies	73.9	112.5
Other Liabilities	48.8	30.2
Total Current Liabilities	199.6	234.5
Long-term Liabilities		
Long-term loans	96.4	128.2
Other long-term liabilities	1.0	0.7
Total Long-term Liabilities	97.4	128.9
Total Liabilities	297.1	363.4

Year	2003	2004
Equity		
Capital	111.7	102.7
Administrative costs subsidies	37.2	32.9
Reserves for Infrastructure Development	182.6	219.3
Reserves for Fixed Assets	413.3	391.3
Reserves, Contingencies, and Others	6.2	3.1
Minority shareholding	0	1.2
Total Equity	751.0	750.4
Total Liabilities and Equity	1,048.0	1,113.8

Source: TA Consultant's report.

B. Financial Analysis of the Project

4. As with the economic analysis, incremental revenue forecasts (in financial terms) were based on traffic forecasts for freight after rehabilitation of the tracks. Incremental operating expenses, net of incremental savings in maintenance of the rails and operational efficiencies of the rehabilitated railways, were also assumed taking into consideration similar industry experience in the railway sector. The Project is expected to be funded 22.5% from equity of the Government of Vietnam and the assumed opportunity cost of such equity financing is 9%. The indicative rate of the Agence Française de Développement (AFD) loan equivalent of up to €32 million is at 6 months euribor less 2.0%, with a maturity of 18 years inclusive of 6 years grace period. The Treasury and Economic Policy General Directorate of the French Ministry of Finance (DGTPE) loan, equivalent of up to €30 million, in the form of tied credits has an indicative rate of 1.25% per annum, a tenor of 20 years inclusive of a 5-year grace period. The interest payments of both AFD and DGTPE loans are not capitalized during the grace period. The weighted average cost of capital (WACC) in real terms is 0.54%.

5. Financial analysis, performed on an incremental basis in real terms and at 2006 prices, indicates that the project will be financially viable with a financial internal rate of return (FIRR) of 3.0%, which is well over the real WACC of 0.54%. The estimated net present value (NPV) of the net cash flows using the WACC as a hurdle rate is \$56.1 million. Sensitivity analysis shows that the Project remains robust when run on scenarios such as a 1-year delay in commencement of operations, a 15% increase in investment cost, and a 15% increase in operating costs. The FIRR calculation was most sensitive to a 15% increase in operating cost, resulting in an estimated FIRR of 2.1%. Even if the above sensitivity scenarios were all combined, the project FIRR is at 0.8%, remaining above the project WACC of 0.54%. These FIRR and NPV calculations (base case) are shown in Table A10.2, a summary of sensitivity scenario impacts on the ratios in Table A10.3, and the WACC calculation in Supplementary Appendix C.

C. Financial Projections

6. Forecasted effects on accounts of the financial positions and operating results were prepared in current terms, on an incremental project basis. The loan is repaid by the Government and is not re-lent to the VNR. Investments in tracks are depreciated over 25 years and all other project capital investments over 50 years. Except for cash shortfall of \$1.6 million in 2009 and \$2.2 million in 2010 in the period prior to completion of rehabilitation in end 2010, the Project is generally financially sustainable, with sufficient cashflows for debt service repayments. The forecasted incremental balance sheet, income statement, and cashflow statement are shown in Table A10.4.

7. A loan covenant has been included, requiring (i) the Government to implement track user charges as appropriate to secure full cost recovery for the Government's debt service obligations, and (ii) VNR's total revenue to be at least equal to its total operating expenses, including the Government's appropriate track user charges.

Table A10.2: Financial Internal Rate of Return and Net Present Value
(\$ million)

Year	Capital Expenditure	Operating Inflows	Net Cash Flows
2008	50.4	-	(50.4)
2009	50.4	-	(50.4)
2010	50.4	-	(50.4)
2011		7.0	7.0
2012		7.4	7.4
2013		7.8	7.8
2014		8.0	8.0
2015		8.1	8.1
2016		8.8	8.8
2017		9.4	9.4
2018		9.9	9.9
2019		10.2	10.2
2020		10.4	10.4
2021		8.7	8.7
2022		7.5	7.5
2023		6.7	6.7
2024		6.3	6.3
2025		6.1	6.1
2026		6.2	6.2
2027		6.5	6.5
2028		6.9	6.9
2029		7.6	7.6
2030	(66.2)	8.3	74.4
Net Present Value (NPV) @ WACC 0.54%			56.1
FIRR			3.0%

FIRR = financial internal rate of return, NPV = net present value, WACC = weighted average cost of capital.

Source: Asian Development Bank estimates.

Table A10.3: Sensitivity Analysis: Financial Internal Rate of Return and Net Present Values

Scenario	NPV @ WACC	
	of 0.54% (\$ million)	FIRR (%)
Base Case	56.1	3.0
1-year delay	48.4	2.7
15% increase in investment cost	39.5	2.1
15% increase in operating cost	39.9	2.2
Combined	5.2	0.8

FIRR = financial internal rate of return, NPV = net present value, WACC = **Please define**

Source: Asian Development Bank estimates.

Table A10.4: Forecasted Incremental Balance, Income Statement and Cash Flows

Incremental Balance Sheet (in \$ million)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Assets												
Cash	26.4	52.4	(1.6)	(2.2)	4.5	9.8	11.6	13.5	2.1	10.8	9.5	8.0
Infrastructure Investments (net of accumulated depreciation)	53.3	106.7	160.0	160.0	155.5	150.9	146.4	141.9	137.3	132.8	128.2	123.7
Total Assets	79.7	159.1	158.4	157.8	159.9	160.7	158.0	155.3	149.4	143.6	137.8	131.7
Liabilities												
Long-Term Debt	58.9	138.0	138.6	139.2	139.8	138.2	133.4	128.6	120.8	112.9	104.9	96.8
Capital	20.9	21.1	19.8	18.6	20.1	22.5	24.6	26.7	28.6	30.7	32.9	34.9
Total Liabilities and Capital	79.7	159.1	158.4	157.8	159.9	160.7	158.0	155.3	149.4	143.6	137.8	131.7
Incremental Income Statement (in \$ million)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Revenue					1.3	2.6	3.8	5.1	6.4	8.5	10.6	12.6
Operating Costs												
Costs (Savings)					(7.0)	(6.1)	(5.1)	(3.9)	(2.4)	(0.6)	1.5	3.9
Depreciation					4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Operating Profit Before Tax					3.7	4.1	4.4	4.5	4.3	4.6	4.5	4.2
Interest Expense	0.5	1.4	1.7	1.7	1.7	1.7	1.7	1.6	1.9	1.7	1.6	1.5
Profit Before Tax	(0.5)	(1.4)	(1.7)	(1.7)	2.0	2.4	2.7	2.9	2.5	2.8	2.9	2.7
Income Tax	(0.1)	(0.3)	(0.4)	(0.4)	0.5	0.6	0.7	0.7	0.6	0.7	0.7	0.7
Net Profit	(0.4)	(1.0)	(1.3)	(1.3)	1.5	1.8	2.0	2.1	1.8	2.1	2.2	2.0
Incremental Cashflows (in \$ million)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cashflows from Operations	0.1	0.3	0.4	0.4	7.7	8.1	8.3	8.3	8.2	8.4	8.3	8.1
Cash (Outflows) for Investment Activities	(53.3)	(53.3)	(53.3)									
Cash Inflows/(Outflows) from Financing Activities	79.58	79.05	(1.07)	(1.07)	(1.07)	(2.76)	(6.42)	(6.42)	(9.63)	(9.63)	(9.63)	(9.63)
Net Change in Cash	26.38	26.05	(53.98)	(0.65)	6.68	5.31	1.83	1.86	(1.40)	(1.24)	(1.29)	(1.57)
Cash Beginning	0	26.4	52.4	(1.6)	(2.2)	4.5	9.8	11.6	13.5	12.1	10.8	9.5
Cash Ending	26.4	52.4	(1.6)	(2.2)	4.5	9.8	11.6	13.5	12.1	10.8	9.5	8.0

Source: Asian Development Bank estimates.

SUMMARY INITIAL ENVIRONMENTAL EXAMINATION

A. Introduction

1. This summary initial environmental examination (SIEE) is based on the initial environmental examination (IEE) for the GMS Kunming–Hai Phong Transport Corridor: Hanoi–Lao Cai Railway Upgrading Project proposed by Vietnam Railways (VNR). The IEE was prepared based on the requirements of ADB’s environmental assessment guidelines¹ using (i) inputs derived from a prefeasibility study conducted in December 2003; (ii) discussions with railway experts on the project team and at the Railway Project Management Unit (RPMU) of VNR; (iii) first-hand observations and secondary data obtained during the reconnaissance survey of areas on both sides of the alignment; and (iv) information gathered through interviews with residents who may be affected as well as with local government officials and officers of railway stations along the alignment.

B. Description of the Project

2. The project railway crosses about 285 kilometers (km) in a northwest direction from Yen Vien near Hanoi, along the Red River to Lao Cai on the border with the People’s Republic of China (PRC). The project is required because (i) the capacity of the existing railway infrastructure from Lao Cai to Yen Vien is insufficient to meet increasing traffic demand to 2020 and (ii) existing train operations are not entirely safe, since the railway line was built at the beginning of 20th century. The rail improvement will include, (i) selective improvement of the horizontal and vertical alignment and track layout; (ii) stabilization of embankments and sliding slopes; (iii) rehabilitation of bridges; (iv) improvements to the track, including turnouts; (v) safety improvements at selected level crossings; and (vi) upgrading of stations; and (vii) extension of passing loops for train loads up to 122 tons and train length of 400 meters (m).

C. Description of the Environment

1. Physical Environment

3. The study area is part of the northwest and northeast climate zones of Viet Nam. It has a monsoon tropical climate, with an annual average temperature of 24°C, the hottest month being June and the coldest being January. Average annual rainfall is 121 millimeter, the highest rainfall being in July and the lowest in October.

4. The topography along the existing alignment varies considerably and includes broad flat plains from Hanoi to Viet Tri, narrow valleys in Vinh Phuc and Phu Tho provinces, denuded low mountains and hills near Yen Bai, loose masses, deeply incised slopes, eroded gullies, and high mountainous uplands between Yen Bai and Lao Cai. There are landslides, land slips, and abandoned quarried sites in all the mountainous regions. Thick layers of sediments have accumulated along the Red River delta between Phu Tho and Yen Bai provinces. The mountainous regions between Yen Bai and Lao Cai exhibit underlying materials of limestone and mudstones. The alignment between Hanoi to Yen Bai is located in a low seismic zone.

5. Ground water resources along the alignment are limited, fairly dispersed, and marginally exploited. Water quality is reported to be good and generally within national standards, although the mining areas between Yen Bai to Lao Cai have affect quality. Surface water along the alignment mainly consists of the Red River and its tributaries, many of which have seasonal flows. The Red River runs along the track and at times is within 10 m of the track, although the railway never crosses the river. No stations along the alignment have wastewater treatment facilities. Soil erosion is a major environmental issue, especially in the mountainous areas of

¹ ADB. 2003. *Environmental Assessment Guidelines*. Manila.

Yen Bai and Lao Cai provinces where there are steep slopes without any vegetation. These have been repeatedly cut by railway construction earthworks and have become eroded. The slopes are unstable and there have been deep land slips and landslides at various places along the alignment. In the plains between Hanoi and Yen Bai, soil erosion is moderate.

6. Air quality ranges from poor to moderate in industrial areas and urban locations near Mau A, Van Phu and Viet Tri. It is generally good in rural and mountainous regions. Open yard storage of coal, ores and ground limestone near stations has resulted in air pollution. Open transportation of ores, cement and ground stone is a mobile source of air pollution. There are considerable baseline levels of noise and vibration caused by the movement of freight and passenger trains along the existing alignment.

2. Ecological Environment

7. Flora and fauna in the area are typical. There are no protected or endangered species reported in the study area. Recently established plantations of bamboo, lychee, eucalyptus, banana, pear, and mango are found along slopes in the Yen Bai and Lao Cai regions. Some trees of medium age were observed 10–20 m from the existing track and a few ancient trees are located 30-50 m from the track. There are no thick forests near the alignment. Terraced tea gardens and rice fields can be found in steep locations. No migrant wild fauna were reported. There are no sensitive or protected areas within 5 km on either side of the alignment. Bao Ha temple is within 600 m of Bao Ha station and Kings Hung temple complex is 2000 m from Tien Kien station. These structures will not be affected by project activities.

3. Socioeconomic Environment

8. There are dispersed, isolated, and self-contained habitations of ethnic minorities in the project area. Most of the provinces, and especially Yen Bai, Lao Cai, and Phu Tho, are rich in mineral deposits, including iron, limestone, apatite, and coal. The well-known Sa Pa tourist location is about 35 km by road from Lao Cai. Because of the scenic nature and cool weather conditions during summer in the region, especially near Lao Cai, a few private tourist resorts are under construction.

D. Anticipated Environmental Impacts and Mitigation Measures

Table A11: Impacts and Mitigation during Construction

Environmental Aspect	Impacts	Mitigation	Implementation Responsibility
Soil	Disposal of excess earthworks	To be used for rail embankments	Contractor in coordination with Soil Conservation Department
	Loss of topsoil	To be stripped, stored and reused for rehabilitation works	
	Damage to temporarily acquired land and failure to rehabilitate borrow areas	Rehabilitation works to be undertaken	
	Soil erosion and siltation	Planting of shrubs and grass, Suitable compaction, placement of geo-synthetics, construction of berms and dikes	
	Contamination by fuel and lubricants	Oil separators at washing areas and installing secondary containment at fuel storage areas	
Water	Improper erosion control and disposal run-off entering the Red River.	Stabilization of embankment, e.g., through seeding with grass	Contractor in coordination with Water Resource Board and local Environmental Protection Bureau (EPB)
	Wash water from workshops	Pass through separator prior to discharge	
	Sanitary wastewater effluent from work camps	Use of septic tanks and primary treatment before discharge to nearby watercourse. No direct	

Environmental Aspect	Impacts	Mitigation	Implementation Responsibility
		discharge of untreated wastewater to surface water body like Red River	
Air Quality	Particulate dust from construction vehicles and activities	Use of water spray trucks to wet down roads	Contractor in coordination with local EPB
	Minor increase in the levels of nitrogen and sulfur oxides	Control of exhaust fumes by meeting emission standards of MONRE	
Noise and Vibration	Noise from maintenance workshops, construction vehicles, earthmoving equipment	Within 200 m of the nearest habitation, construction work such as crushing, concrete mixing and batching, mechanical compaction etc. will be stopped between 2200 and 0600 hours. Plant and equipment used in construction will strictly conform to National noise standards. Equipment will be properly maintained to minimize noise emissions	Contractor in coordination with local EPB
	Impact from vibration to buildings from heavy earthmoving equipment	Installing low vibration slab tracks and continuous welded rail	
Solid and Hazardous Waste	Domestic and construction waste from work camps	Temporary storage and regular disposal of the waste to the identified disposal sites proposed by local EPB officials	Contractor in coordination with local EPB
	Hazardous waste from worksites	Collected and stored on-site in approved facilities as per relevant standards. Then removed from site to the site approved by local EPB officials	
	Spoil from cuts	To be used for filling embankments, with excess quantity stored with containment walls for future use	
Hazardous Materials	Accidental spillages affecting soil, groundwater and adjacent water bodies, especially in regions very close to Red River.	Installing appropriate hazardous storage facilities wherever required and their disposal at identified sites	Contractor in coordination with local EPB
Erosion	Increase in the levels of erosion, particularly in areas where the soil types and topography are susceptible to erosion	Implement the mitigation measures suggested in the erosion prevention plan prepared for the Project as part of pre-feasibility studies.	Contractor in coordination with Soil Conservation Department
Flora and Fauna	Minimal impact in the plains between Yen Vien and Yen Bai. Some loss of plantation areas very close to the existing track between kms 277 to 280 toward Lao Cai	Development of a 30 m green belt on both sides of the proposed rail track	Contractor in coordination with Forest Department
	Loss of a small number of medium-sized trees very close to the existing track. There will be no loss of ancient trees. Cutting of firewood and poaching by construction workers	Loss of trees compensated by planting of similar species in the proposed green belt on either side of the new track. Providing cooking fuel to workers	
	Impact to aquatic ecology during construction of bridge, as pile driving will increase sedimentation in the waterways	Proper engineering design to minimize sediment-laden discharge to the water column below	
Public Safety and Health	Increased risk of construction workers spreading sexually transmitted infections and HIV/AIDS	Public health officer will regularly inspect work camps and disseminate appropriate information	Contractor and executing agency

EPB = Environmental Protection Bureau, HIV/AIDS = human immunodeficiency syndrome/acquired immunodeficiency syndrome, km = kilometer, MONRE = Ministry of Natural Resources and Environment,

Source: TA Consultant Report.

E. Institutional Requirements and Environmental Monitoring Plan

9. The Vietnam Railways (VNR) is the executing agency (EA) for the Project and through its Railway Project Management Unit (RPMU) it will have overall responsibility for ensuring that environmental standards and procedures are followed. The environmental management plan (EMP) prepared for the Project defines the potential impacts during various project phases, and provides appropriate mitigation measures and a monitoring framework. Responsibilities for implementation of control measures are also specified in the EMP. The EA will establish an Environmental Protection and Management Division (EPMD) that will ensure the implementation of the environmental management and monitoring plan during the construction and operation phases of the Project. RPMU and EPMD will ensure that the contractors comply with the mitigating measures suggested during the construction and operation phases. The EPMD will be especially responsible to ensure the implementation of recommended mitigation measures

10. The EPMD will prepare a detailed environmental monitoring plan for the Project before bidding for construction contracts begins. The EMP will be included in all bidding documents and construction contracts. The EPMD will ensure that the environmental monitoring plan is updated, as required, during project construction and operation. Environmental monitoring will be undertaken by a range of authorities, including local environmental protection bureaus (EPBs), the forestry department, and relics bureaus. The EPMD will be responsible for coordinating all environmental monitoring activities, including collation of all monitoring results. An environmental monitoring framework is included in the IEE. This covers monitoring of air quality, noise levels, water quality, and impacts on aquatic ecology, terrestrial flora and fauna, as well as disposal of excavation spoils.

F. Public Consultation

11. Public consultations were conducted in March and April 2006. Individual and group discussions were conducted in rural areas, especially with members of ethnic minority groups, and at urban sites along the proposed alignment. Discussions were conducted with officials of railway stations and project management officials. The objective of the consultations was to disseminate project information and gather views on probable environmental and social impacts of the Project. The participants expressed concerns about noise and vibration impacts, safety at level crossings, the current absence of proper solid waste management and discharge of untreated wastewater at stations, and the compliance of contractors with mitigation measures. The consultants explained in detail the methods of mitigation and compliance monitoring. All the participants supported the proposed project and wanted its early implementation, which would bring socioeconomic development to the region.

G. Conclusion

12. Potential environmental impacts from the proposed project may arise from (i) earthwork disposal, (ii) soil erosion, (iii) site-specific degradation of surface water quality, (iv) noise pollution, and (v) vibration. Implementation of appropriate mitigation measures and monitoring during various project phases will reduce these negative impacts to acceptable levels. In conclusion, the Project will have overall beneficial impacts in terms of safety, travel time, and socioeconomic conditions along the project corridor. No additional impact assessment study is required for this project.

SUMMARY POVERTY REDUCTION AND SOCIAL STRATEGY

A. Linkages to the Country Poverty Analysis

Is the sector identified as a national priority in country poverty analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Is the sector identified as a national priority in country poverty partnership agreement?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p>Contribution of the sector or subsector to reduce poverty in Viet Nam: Viet Nam's economic growth has been remarkable. Rapid economic growth in economic output, business investment and private sector—combined with Government's targeted poverty reduction interventions—has resulted in sharp decline in poverty. Poverty incidence fell from about 58% in 1993 to 24.1% in 2004. To sustain economic growth, attract private investment, and take full advantage of the benefits of regional and international integration, there is need to accelerate infrastructure development. Infrastructure development is required to overcome existing weaknesses and to respond to rapidly growing demand for new infrastructure. Rail is the second most important transport mode and connects many cities, towns, industrial and residential areas. It carries substantial traffic, including transit traffic between Hai Phong port and Yunnan province, bilateral trade between Viet Nam and China, and domestic traffic. The goal of the Project is to: (i) facilitate regional trade and economic growth in northeastern Viet Nam and Yunnan province; (ii) facilitate access to and from Hai Phong port for Yunnan province, especially for containers; (iii) reduce transport costs; (iv) improve traffic safety; and (v) secure sufficient railway capacity to handle future traffic demand.</p>			

B. Poverty Analysis

Targeting Classification: General Intervention

Following Asian Development Bank's (ADB) enhanced poverty reduction strategy, projects classified as general interventions no longer require poverty assessments. The resettlement plan will include a compensation plan and an income improvement program for 591 households affected by land acquisition and relocation. Of the total affected households, 180 will be severely affected. Of those required to relocate, 74% are from Lao Cai station. The railway passes through 88 communes and 88 districts in the provinces of Lao Cai, Yen Bai, Vinh Phuc, Phu Tho and the city of Hanoi. The main population groups who will be affected are Kinh (i.e., ethnic Vietnamese). The Tay-Nung, Ray and Hoa ethnic groups live near Lao Cai station. A total of 27 ethnic minority households are affected by the Project, accounting for 7% of the affected people, and in addition there are 5 ethnic minority host families in the resettlement sites. Of these 27 ethnic minority households, 23 are in Lao Cai area. Most (50%) are engaged in land-based activities, i.e., agriculture and forestry. The rest are engaged in business and services, the civil service, industry and handicrafts, casual labor, and factories. Many of the affected households are railway employees living on railway land near Lao Cai station. Among the affected households, host communities in the proposed resettlement sites are mainly engaged in agriculture activities and wage work. The main types of land loss caused by the Project are agricultural, residential, and common land; gardens or ponds; and forests. The affected land holdings are in both urban and rural areas. Most affected households already have, or are in the process of obtaining, a land use rights certificate for their residential and agricultural land. Nearly all affected households have access to drinking water, primary schools, medical clinics, hospitals, post offices, paved roads and provincial roads.

C. Participation Process

Is there a stakeholder analysis?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	During the project preparatory technical assistance (PPTA), meetings were held with various stakeholders, government officials, and affected communities (including relocated people and host communities). Consultations were held with the affected households to discuss resettlement issues.
Is there a participation strategy?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A consultation workshop will be held with the affected households (e.g., railway employees and host communities), and government officials during implementation of resettlement plan. The workshop will discuss such issues as compensation, relocation, and land acquisition.

D. Gender Development

Strategy to maximize impacts on women:
 The gender strategy covers households affected by resettlement. Most of the affected households are railway employees living on railway land. Women from the affected households work as railway employees, small business and petty trading, wage work, and as agricultural workers. Women and girls make up 50% of the affected population. About 33% of affected households are headed by women. The average annual income of these households is 86% of households headed by men. Land use certificates were in the name of both men and women for only 5% of the affected households for residential land and 3% for agricultural land. The results of the first orientation meeting on resettlement shows that women, and especially those heading households, have specific risks from resettlement because of their lack of control over land and productive assets, and their lack of access to information.

Trafficking of girls may increase in the PRC border area once the railway line is improved and cross-border trade increases. An HIV/AIDS awareness and human trafficking program will be developed and implemented during project implementation. Construction contracts will include community-based prevention programs for workers. The Project includes the following specific measures to address gender issues for the households affected by land acquisition and relocation.

In the railway settlement and in the affected communes and villages, and for host communities, separate consultation workshops will be conducted on resettlement planning. These will cover resettlement sites, compensation, and improvements to livelihood. The participants will include men and women from affected households, but specific emphasis will be placed on participation by women who head households and women from ethnic minorities.

- Men and women from the affected households will participate in the discussion on loss of inventory.
- The district resettlement committees will include representatives of district Women's Unions. The commune resettlement committees will include representatives of commune Women's Unions and women from the affected households, including women who head households and women from ethnic minority groups.
- At the inception phase, a workshop on resettlement will be conducted for the affected households (people being relocated and host communities). Emphasis will be given to include women who head households, ethnic minority households, and women from host communities.
- In addition, a capacity building training program will train district and commune resettlement committee members, representatives of the Women's Union and Youth Union and women from affected households, including women who head households and women from ethnic minorities. The objective of the training will be to provide detailed information on resettlement activities, including proposed sites, entitlements, the compensation plan, livelihood strategies for income improvement, and grievance procedures.
- In activities related to relocation, compensation, and livelihood improvement, special consideration will be given to poor households headed by women and ethnic minority households among people being relocated and host families.
- A resettlement plan will include joint registration of land rights in the names of the husband and wife in instances where land is acquired.
- There is increased risk of HIV/AIDS to the communities in the Project sites because of the influx of construction workers. The HIV/AIDS and human trafficking awareness program will include women leaders and youth from the affected households and members of the Women's Union and Youth Union. The HIV/AIDS and human trafficking programs will be coordinated with government programs and other existing initiatives.
- As per the Labor Code (as amended in 2002), all employment for the Project will respect Government commitments to gender equity, including (i) deployment of women workers in construction works; (ii) ensuring that children will not be used; and (iii) no differential wages paid to men and women work for equal value.
- Disaggregated monitoring indicators by gender and ethnic groups will be developed for the management information system.
- Gender sensitization training on gender and resettlement for relevant staff from the executing agency, district and commune resettlement committees, and the Women's Union.
- A national social development and gender specialist will be recruited for 8 months to prepare a gender action plan to implement the gender strategy. The gender specialist will coordinate with resettlement specialist to prepare the action plan.

Has an output been prepared? Yes No
The project gender strategy is prepared for the households affected by resettlement.

E. Social Safeguards and Other Social Risks

Item	Significant/ Not Significant/ None	Strategy to Address Issues	Plan Required
Resettlement	<input checked="" type="checkbox"/> Significant <input type="checkbox"/> Not significant <input type="checkbox"/> None	A full resettlement plan has been prepared.	<input checked="" type="checkbox"/> Full <input type="checkbox"/> Short <input type="checkbox"/> None
Affordability	<input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

<p>Labor</p>	<p><input type="checkbox"/> Significant <input type="checkbox"/> Not significant <input checked="" type="checkbox"/> None</p>	<p>In the construction camp sites, labor standards will be maintained and basic facilities will be provided. Employment will be provided for poor households affected by the Project. No trafficked or child labor will be used for construction and maintenance.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p>Indigenous Peoples</p>	<p><input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None</p>	<p>Most affected households are Kinh (i.e., ethnic Vietnamese). The ethnic minority households (e.g., Tay-Nung, H'mong-Dzao, Hoa, Ray) account for 7% of affected households. The ethnic minorities are dispersed among Kinh and no communities made up of one ethnic group were identified in the project area or in the resettlement sites. The social survey indicates that the average annual household incomes of affected households from ethnic minorities are lower than those of the Kinh. However, incomes of affected households from ethnic minorities are higher than those of Kinh households at Xuan Giao and at Thai Nien stations. The household heads of affected households from ethnic minorities showed higher levels of educational attainment than their Kinh counterparts at Thai, Nien, Xuan Giao, and Lao Cai stations. The social survey indicates that resettlement will not have different a greater negative impact on ethnic minority groups than on Kinh. However, to ensure that ethnic minority groups will not be marginalized during the process of resettlement, specific activities have been incorporated in the resettlement plan and gender strategy.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Ethnic minorities specific activities have been incorporated into the resettlement plan. Monitoring of resettlement activities using disaggregated monitoring indicators will report on whether households from ethnic minorities are marginalized during the compensation process.</p>
<p>Other Risks and/or Vulnerabilities</p>	<p><input type="checkbox"/> Significant <input checked="" type="checkbox"/> Not significant <input type="checkbox"/> None</p>	<p>Reallocation of land of the host communities in the resettlement sites may result in limited access to productive land by the host communities. There is potential risk of displacement among host communities in the proposed resettlement sites to provide land for relocated people.</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p> <p>Measures will be included in the resettlement plan to ensure that host communities are not marginalized in the resettlement sites and displaced host households received proper compensation.</p>

SUMMARY RESETTLEMENT PLAN

A. Scope of Land Acquisition and Minimization of Resettlement

1. The resettlement plan for the Project covers the following components requiring resettlement: flyover bridge (1); new station (1); new loops (9); extension of passing loops (8); and realignment (2) of various sections of the railway line. The resettlement plan also covers the land required for the two resettlement sites for households relocating from Lao Cai station. Resettlement impacts were minimized by selecting engineering options that affected the least number of persons, while providing the most operational gains in safety and efficiency for the railway line, e.g., by not clearing land and structures in the whole right-of-way (ROW) unless certain structures or uses would create special safety risks to line operation.

2. The total number of project-affected households covered in the resettlement plan is 591 (2,378 people). There are 411 project-affected households in the Project's corridor of impact (COI).¹ Of these, 128 will be required to relocate (46 are joint house and business) and 88 will lose more than 10% of their agricultural land. In the two resettlement sites proposed for Lao Cai town, 180 households will be affected by acquisition of their residential and garden land for the resettlement sites. Of the 46 businesses that will be affected, 41 will be able to rebuild on remaining land. The remaining 5 businesses will be required to relocate to another plot of land with comparable commercial potential.

B. Policy Framework and Project Entitlements

3. The policy framework and entitlements of the Project have been based upon Vietnamese legislation, principally the 1993 Land Law amended in 1998, 2001 and 2003; Decree 197/CP (2004), as amended by Decree 17/CP (2006), on Compensation, Support and Resettlement when land is recovered by the State; Circular 116 (2004) on guiding the implementation of Decree 197. They have also been based on ADB's policies on involuntary resettlement, indigenous peoples, gender and development, accountability, and public communications². With the promulgation of Decree 197/CP (2004) and Decree 17/2006, the Government's policy and legal framework related to resettlement has moved much closer toward the principles underlying ADB's policies. However, in case of discrepancies between the Government's laws, regulations, and procedures and ADB's policies and requirements, ADB's policies and requirements will prevail. This is also in accordance with Decree 17/2001 which stipulates that for projects financed by partner organizations, the donors' policies will apply.

4. The primary strategy for ensuring that affected persons (APs) are able to maintain or improve pre-project living standards and production levels is (i) to ensure that all losses will be compensated at replacement cost in cash or in kind and (ii) to provide transitional assistance (such as materials, transport, subsistence allowances, and incentive allowances for timely removal) and income restoration programs to severely affected APs and vulnerable groups to support them in re-establishing their income sources and production bases. Summary project entitlements are shown in the Table A13.

Table A13: Project Entitlements

Impacts	Entitlements
Permanent Acquisition of Land	For land that will be permanently used, APs will receive replacement land or cash compensation at replacement cost (based on current market value, productive value, and similar location attributes). Non-titled APs will be allowed to use any remaining land that they are informally occupying; they not be entitled to compensation for land, but will be entitled to compensation for non-land assets and to rehabilitation assistance. The landless will be provided with replacement land; landless APs losing the use of residential or commercial land will be provided with land in a fully-serviced resettlement site or market;

¹ Land for the railway line and station that will be required permanently.

² ADB. 1995. *Involuntary Resettlement*. Manila; ADB. 1998. *The Bank's Policy on Indigenous Peoples*. Manila; ADB. 2003. *Gender and Development*. Manila; ADB. 2005. *An Information Guide to the Consultation Phase of the ADB Accountability Mechanism*. Manila; and ADB. 2005. *Public Communications Policy, Disclosure and Exchange of Information*. Manila.

Impacts	Entitlements
	landless APs losing agricultural land use will also be allocated replacement land on a temporary or lease basis.
Structure, Crops and Trees (irrespective of tenure status)	All legal owners of houses and structures will be paid based on current market prices of materials and labor, with no deduction for depreciation or salvageable materials. Unharvested crops will be compensated for based on current market value while trees will be paid for based on type, age, and productive capacity.
Community Buildings, Public Infrastructure and Facilities	Repair or restoration to original or better conditions of affected community buildings and infrastructure at no cost to the community; or placement, if necessary, at locations identified in consultation with affected communities and relevant authorities, at no cost to the community; or cash compensation at replacement cost for affected community assets.
Loss of Income from Business and Income Sources (Temporary)	For unregistered businesses, cash compensation for the duration of business or income generation that is disrupted based on the minimum wage per month. For registered businesses, cash compensation for the duration of business and income generation that is disrupted based on net income. For employees, cash compensation for wages for each month they cannot work
Tenants/Renters in Private or Government Housing	Tenants will be eligible for 6 months rent allowance, assistance in finding new and affordable rental accommodation, and transitional assistance allowances.
Disruption and Inconvenience during physical relocation	All relocating households will receive transitional assistance allowances: (i) materials transport allowance between D3 million and D5 million per household; (ii) subsistence transition allowances of 30 kg of rice per household member per month for 6 months; (iii) and an incentive allowance (maximum of D5 million) for APs who move on time.
Severely affected households and poor and vulnerable households	The income restoration program will include micro-credit funds, assistance for occupational change or enhancement (training), project-related employment opportunities, access to micro-credit, reserving spaces at various stations for APs to do businesses, and links to socioeconomic and development programs in the area
Temporary Impacts (during construction)	Payment of rent for the use of land during temporary use. Compensation for non-land assets at replacement cost caused by construction activities. Return of land to pre-project conditions or better.

C. Resettlement and Rehabilitation Strategies

5. Income restoration will be required for 88 households severely affected by the loss of 10% or more of their productive agricultural land, and for 5 businesses that will be permanently displaced. As a priority, the agricultural land will be replaced and the 5 business will be assisted to relocate to locations with comparable business potential.

6. At the Van Phu, Mai Tung and Lao Cai stations, as well as at both resettlement sites, consultations will be held with local authorities, the Railway Project Management Unit (RPMU) and the Railway Public Utility Company (RPUC). The rehabilitation strategies in Mai Tung and Lao Cai will emphasize (i) provision of replacement land where available, notably at Mai Tung; (ii) finding new employment, e.g., at the new rail station in Mai Tung or industrial zones currently being developed in Lao Cai; (iii) developing non-land-based businesses, e.g., by reserving land spaces at the station for APs to build small service sector businesses; and (iv) integrating rehabilitation efforts with the social and economic development programs and policies of local government and nongovernmental organizations in the area, such as the vocational training and support centers in Lao Cai city. For the remaining 18 project sites, where there are fewer than 5 severely affected APs at each site, the specific strategy for their rehabilitation will be determined on a case-by-case basis together with local authorities during updating of the resettlement plan. The specific distribution of funds for income rehabilitation assistance will be determined together with the relevant People's Committee and the eligible APs, depending on the income opportunities available in the locality and the specific needs and interests of the APs. Examples of uses for these funds include microcredit funds and start-up materials and equipment for new businesses.

7. With regard to relocation, the Lao Cai city People's Committee has planned two resettlement sites to accommodate the 90 APs who will relocate from Lao Cai station in Pho Moi

ward and Van Hoa commune. At the resettlement sites, each incoming household will be provided with a residential land plot of 80–100 m²; the sites will be fully serviced with external and internal road access, residential electricity, residential water supply, and drainage. APs that opt not to relocate to the resettlement site will be assisted to find another location. The 180 households whose land and non-land assets will be affected by the resettlement site development will be entitled to the same compensation and rehabilitation assistance provided to APs in the Project's impact areas. Host APs who currently have houses on the resettlement site lands will be given assistance to relocate³ together with the APs from the project sites. In various sections of the railway where there will be a few APs that will be required to relocate and do not have sufficient residual land, the APs will be provided with individual replacement plots within the commune. No AP will be displaced until another place of residence or business has been identified and secured.

D. Ethnicity, Vulnerability, and Gender Issues

8. Ethnic minorities are only 7% (32 households) of the AP population (ethnic minorities comprise 14% of the national population). No large groups (i.e., more than 10) of ethnic minority AP households were found living together as a single community in the area of impact or the resettlement sites. However, to address the special risks and needs of ethnic minorities, specific actions have been outlined in the resettlement plan. With regard to identifying and addressing the needs of women and helping prevent discrimination, a gender strategy has been outlined in the resettlement plan. Special attention will be given to identifying and addressing any special needs of other vulnerable groups (the poor, landless and disabled) by carrying out separate consultation meetings and by ensuring that they also benefit from the special assistance and income rehabilitation programs. (See gender strategy included in Appendix 12).

E. Participation, Grievance Redress, and Disclosure

9. Because the Project's area of impact includes many project sites with generally few households in each site, the first consultation meeting was carried out simultaneously with the inventory of losses and socioeconomic survey. All affected households took part. The primary purpose of the first consultation meeting was to provide APs with basic information on the Project, policies and principles for resettlement, and the process for developing the resettlement plan. A total of 551 APs attended the meetings, 180 of whom were women. The draft resettlement plan was disclosed during the second consultation meeting which was held at Lao Cai station. This meeting covered all components within the Yen-Lao RPUC. Another workshop was held at the Vinh Phu station for all components within its jurisdiction. Participants from Ha Thai RPUC also participated in this workshop for components in their jurisdiction. A total of 60 participants from various government departments, people's committees, and APs attended the meeting, 7 of whom were women. Copies of the draft resettlement plan were provided to relevant government offices and RPUC. Copies of the project information booklet were provided to RPUC and distributed to APs.

10. A grievance mechanism will be established to ensure that APs' concerns and grievances are addressed and resolved in a timely and satisfactory manner. APs will be made fully aware of their rights orally and in writing during consultations, surveys, and at the time of compensation payment. Copies of the ADB's *An Information Guide to the Consultation Phase of the ADB Accountability Mechanism* (footnote 2) (translated into Vietnamese) were also provided to APs during the consultation meeting.

F. Implementation Arrangements and Monitoring

11. The main institution responsible for executing the resettlement plan will be the RPMU, under the supervision of Vietnam Railways and the Ministry of Transport and in close

³ The design of the resettlement site may require them to move back or transfer to another plot of land within the resettlement site.

coordination with the relevant provincial People's Committees. The provincial People's Committees will establish the resettlement committees at provincial and district levels. Project supervision consultants will be engaged for supervision and capacity building to ensure that land acquisition and resettlement are carried out properly. The project supervision consultants (one international resettlement specialist, one national resettlement specialist, and one national gender and social development specialist) will be recruited and mobilized before any resettlement activities begin. A detailed measurement survey of affected land and assets will be carried out.

12. The RPMU will be responsible for internal monitoring of resettlement activities. Progress reports will be submitted to ADB quarterly. An independent monitoring agency (IMA), specialized in social sciences, will be recruited for 3 years and mobilized before any resettlement activities, including the detailed measurement survey of affected land and assets begin. The independent monitoring agency will report directly to the RPMU and the ADB. External monitoring will be carried out quarterly during the first year of implementation and then every 6 months until all APs have been relocated.

G. Cost Estimates and Implementation Schedule

13. The total cost for resettlement is estimated at \$4.6 million. It covers compensation costs, livelihood stabilization and socioeconomic support programs, resettlement site development, management and implementation costs, and a 20% contingency. This amount may change at the time of the detailed measurement survey to take into account actual losses and changes in prices that may have occurred between the preparation of the resettlement plan and actual implementation. The Government will ensure timely provision of counterpart funds for resettlement and will meet any unforeseen obligations in excess of the resettlement plan budget in order to satisfy resettlement objectives.

14. The resettlement plan will be updated following the detailed design. It will be disclosed to APs before it is submitted to ADB for review and approval. For sections where there will be no land acquisition and resettlement, the civil works contractors will not be issued a notice of possession of sites of a particular section until the RPMU, together with the resettlement consultants, confirms that the area for the section will not have any resettlement impacts and that the land is free of any encumbrances, dispute, or controversy. For sections where resettlement impacts cannot be avoided, civil works contractors will not be issued a notice of possession of a particular section until (i) compensation payment and relocation to new sites have been satisfactorily completed in that particular section, (ii) agreed rehabilitation assistance is in place, and (iii) that particular section is free of all encumbrances. Land acquisition and relocation of APs cannot begin until the updated resettlement plan has been reviewed and approved by ADB.

15. To ensure that temporary impacts during construction will be minimized and avoided if possible, the civil works contract will have the following requirements: (i) the contractor will pay rent for any additional land required for construction working space and a mechanism for payment will be specified in the relevant bid documents; (ii) the construction working space, to the extent possible, will use only unused land, will not have any impacts on houses and structures, and will not disrupt access to households or business establishments and shops; and (iii) temporary use of land will be restored to its pre-project condition or improved. RPMU will establish a mechanism to record impacts and ensure payments made to APs by the RPMU and resettlement committees, financed by the contractor, are at replacement cost in accordance with the approved resettlement plan. RPMU will record and review all written agreements between the contractor and APs to facilitate proper monitoring and compliance with the approved resettlement plan. This will be reported in the quarterly progress reports submitted to ADB.