



# Completion Report

---

Project Number: 34356  
Loan Number: 2195; Grant Number: 0022  
October 2013

## Viet Nam: Central Region Transport Networks Improvement Sector Project

Asian Development Bank



## CURRENCY EQUIVALENTS

Currency unit – dong (D)

		<b>At Appraisal</b>	<b>At Project Completion</b>
		30 September 2005	10 June 2013
D1.00	=	\$0.0001	\$0.00005
\$1.00	=	D15,895	D20,784
SDR1.00	=	\$1.450	\$1.550

## ABBREVIATIONS

ADB	–	Asian Development Bank
ADF	–	Asian Development Fund
BME	–	benefit monitoring and evaluation
CPRGS	–	Comprehensive Poverty Reduction and Growth Strategy
DFID	–	Department for International Development of the United Kingdom
EIRR	–	economic internal rate of return
EMDP	–	ethnic minority development plan
EMSA	–	ethnic minority specific actions
HIV/AIDS	–	human immunodeficiency virus/acquired immunodeficiency syndrome
IEE	–	initial environmental examination
km	–	kilometer
m	–	meter
MOT	–	Ministry of Transport
PDOT	–	provincial department of transport
PMS	–	pavement management system
PMU-1	–	Project Management Unit number 1
PPC	–	provincial people's committee
PPMU	–	provincial project management unit
PPTA	–	project preparatory technical assistance
RMF	–	road maintenance fund
RPF	–	resettlement policy framework
SDR	–	special drawing rights

## NOTES

- (i) The fiscal year (FY) of the governments ends on 31 December. FY before a calendar year denotes the year in which the fiscal year ends, e.g., FY2006 ends on 31 December 2006.
- (ii) In this report, "\$" refers to US dollars.

<b>Vice-President</b>	S. Groff, (Operations 2)
<b>Director General</b>	J. Nugent, Southeast Asia Department (SERD)
<b>Director</b>	T. Kimura, County Director, Viet Nam Resident Mission (VRM), SERD
<b>Team leader</b>	L. Thang, Senior Project Officer (Transport), VRM, SERD
<b>Team members</b>	L. Huong, Associate Project Analyst, VRM, SERD

In preparing any country program or strategy, financing any project, or by making any designation of or reference to a particular territory or geographic area in this document, the Asian Development Bank does not intend to make any judgments as to the legal or other status of any territory or area.

## CONTENTS

	<b>Page</b>
BASIC DATA	i–ix
I. PROJECT DESCRIPTION	1
II. EVALUATION OF DESIGN AND IMPLEMENTATION	1
A. Relevance of Design and Formulation	1
B. Project Outputs	2
C. Project Costs	4
D. Disbursements	5
E. Project Schedule	6
F. Implementation Arrangements	7
G. Conditions and Covenants	8
H. Related Technical Assistance	8
I. Consultant Recruitment and Procurement	8
J. Performance of Consultants, Contractors, and Suppliers	10
K. Performance of the Borrower and the Executing Agency	11
L. Performance of the Asian Development Bank	11
III. EVALUATION OF PERFORMANCE	11
A. Relevance	11
B. Effectiveness in Achieving Outcome	12
C. Efficiency in Achieving Outcome and Outputs	12
D. Preliminary Assessment of Sustainability	13
E. Impact	13
IV. OVERALL ASSESSMENT AND RECOMMENDATIONS	14
A. Overall Assessment	14
B. Lessons	14
C. Recommendations	15
APPENDICES	
1. Project Framework	16
2. Appraisal and Actual Project Costs	19
3. Currency Equivalents	20
4. Summary of Contracts Funded by ADB	21
5. Projected and Actual Disbursements	26
6. Project Implementation Schedule	27
7. Chronology of Major Events	28
8. Status of Compliance with Major Loan Covenants	30
9. Assessment of Project Impacts and Benefits	38
10. Economic Reevaluation	41
11. Land Acquisition, Resettlement, and Ethnic Minorities	51
12. Quantitative Assessment of Overall Project Performance	63



## BASIC DATA (Loan 2195)

### A. Loan Identification

1.	Country	Socialist Republic of Viet Nam
2.	Loan Number	2195-VIE
3.	Project Title	Central Region Transport Networks Improvement Sector Project
4.	Borrower	Socialist Republic of Viet Nam
5.	Executing Agency	Ministry of Transport
6.	Amount of Loan	
	Original Loan Amount	SDR65,197,000 (\$94,500,000)
	Net Loan Amount	SDR61,205,592.20 (\$94,853,529.70)
7.	Project Completion Report Number	PCR: VIE 1419

### B. Loan Data

1.	Appraisal	
	– Date Started	21 March 2005
	– Date Completed	1 April 2005
2.	Loan Negotiations	
	– Date Started	10 October 2005
	– Date Completed	11 October 2005
3.	Date of Board Approval	11 November 2005
4.	Date of Loan Agreement	30 November 2005
5.	Date of Loan Effectiveness	
	– In Loan Agreement	28 February 2006
	– Actual	28 February 2006
	– Number of Extensions	0
6.	Closing Date	
	– In Loan Agreement	31 December 2010
	– Actual	10 June 2013
	– Number of Extensions	1
7.	Terms of Loan	
	– Interest Rate	1.0% per annum during the grace period and 1.5% per annum thereafter
	– Maturity (years)	32
	– Grace Period (years)	8
8.	Disbursements	

#### a. Dates

Initial Disbursement	Final Disbursement	Time Interval
6 July 2006	28 May 2013	82 months
Effective Date	Original Closing Date	Time Interval
28 Feb 2006	31 December 2010	58 months

b. Amount (SDR million)

Category or Subloan	Original Allocation <sup>a</sup>	Last Revised Allocation	Amount Disbursed	Undisbursed Balance <sup>b</sup>
01A Civil Works—Roads	61.40	61.40	58.66	2.74
01B Support to PMU-1	0.24	0.24	0.21	0.03
02 Consulting Services	1.38	1.38	1.30	0.08
03 Interest Charges	2.17	2.17	1.03	1.14
<b>Total</b>	<b>65.19</b>	<b>65.19</b>	<b>61.20</b>	<b>3.99</b>

<sup>a</sup> The difference between the original allocation and the revised total amount was due to the exchange rate variation between special drawing rights (SDR) and the US dollar.

<sup>b</sup> An undisbursed loan amount of SDR3,991,407.80 (equivalent \$6,005,272.61) was cancelled at loan closing date of 10 June 2013.

Amount (\$ million)

Category	Original Allocation <sup>a</sup>	Last Revised Allocation	Amount Disbursed	Undisbursed Balance <sup>b</sup>
01A Civil Works – Roads	89.01	96.68	90.93	5.75
01B Support to PMU-1	0.35	0.35	0.33	0.02
02 Consulting Services	2.00	2.11	1.98	0.13
03 Interest Charges	3.14	1.71	1.61	0.10
<b>Total</b>	<b>94.50</b>	<b>100.85</b>	<b>94.85</b>	<b>6.00</b>

<sup>a</sup> The difference between the original allocation and the revised total amount was due to the exchange rate variation between special drawing rights (SDR) and the US dollar.

<sup>b</sup> An undisbursed loan amount of \$6,005,272.61 was cancelled at loan closing date of 10 June 2013.

9.	Local Costs (Financed)	Appraisal	Actual
	Amount (\$)	18.20	25.87
	Percent of Local Costs	34.33	44.62
	Percent of Total Costs	13.19	18.61

### C. Project Data

1. Project Cost (\$ million)

Cost	Appraisal Estimate	Actual
Foreign Exchange Cost	85.00	81.05
Local Currency Cost	53.00	57.98
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

Note: Numbers may not sum precisely because of rounding.

## 2. Financing Plan (\$ million)

<b>Cost</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
Implementation Costs		
Borrower Financed	32.00	29.33
ADB Financed (ADF Loan)	91.40	93.24
ADB Financed (ADF Grant)	0.50	0.43
NDF Finance	11.00	14.43
<b>Total</b>	<b>134.90</b>	<b>137.43</b>
IDC Costs		
Borrower Financed	0.00	0.00
ADB Financed (ADF Loan)	3.10	1.61
ADB Financed (ADF Grant)	0.00	0.00
NDF Financing	0.00	0.00
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

ADB = Asian Development Bank, ADF = Asian Development Fund, IDC = interest during construction, NDF = Nordic Development Fund.

## 3. Cost Breakdown by Project Component (\$ million)

<b>Component</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
A. Civil Works <sup>a</sup>	102.20	119.83
B. Consulting services	12.10	15.15
Gender, HIV, and Anti-Trafficking Program	0.50	0.43
C. Environmental Mitigation <sup>b</sup>	3.80	0.00
D. Project Management	0.50	2.02
E. Taxes and Duties <sup>c</sup>	15.80	<b>0.00</b>
<b>Total Baseline Costs</b>	<b>134.90</b>	<b>137.43</b>
Interest during Construction	3.10	1.61
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

HIV = human immunodeficiency virus.

<sup>a</sup> Includes allowances for land acquisition costs, contingencies, unexploded ordnance clearance, and support to Project Management Unit 1.

<sup>b</sup> Actual included in civil works contracts

<sup>c</sup> Estimated at 16% of civil works base cost

Source: Asian Development Bank calculations.

#### 4. Project Schedule

Item	Appraisal Estimate	Actual
<b>A. Consulting Services</b>		
1. Civil Works Preparation Services		
Start	Q1 2005	Q3 2005
Completion	Q3 2006	Q3 2007
2. Implementation Services		
Start	Q3 2005	Q3 2006
Completion	Q2 2009	Q3 2012
3. Gender, HIV, Anti-Trafficking Program		
Start	Q1 2006	Q1 2007
Completion	Q2 2009	Q3 2010
4. Institutional Development		
Start	Q3 2006	Q2 2008
Completion	Q2 2009	Q2 2010
<b>B. Civil Works</b>		
1. Phase 1		
Start	Q3 2005	Q3 2007
Completion	Q2 2008	Q4 2010
2. Phase 2		
Start	Q3 2006	Q3 2007
Completion	Q4 2008	Q4 2010
3. Phase 3		
Start	Q3 2006	Q3 2007
Completion	Q2 2009	Q2 2012
Other Milestones		
1. Minor change in financing arrangements on 30 January 2009.		
2. Extension of closing date of loan 2195 to 30 June 2012 approved on 16 April 2010		
3. Grant 0022 financially closed and undisbursed amount of \$73,950.55 cancelled on 4 October 2011		
4. Loan 2195 financially closed and undisbursed amount of SDR3,991,407.80 (equivalent \$6,005,272.61) cancelled on 10 June 2013		

#### 5. Project Performance Report Ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
11 Nov–31 Dec 2005	Satisfactory	Satisfactory
1 Jan–31 Dec 2006	Satisfactory	Satisfactory
1 Jan–31 Dec 2007	Satisfactory	Satisfactory
1 Jan–31 Dec 2008	Satisfactory	Satisfactory
1 Jan–31 Dec 2009	Satisfactory	Satisfactory
1 Jan–31 Dec 2010	Satisfactory	Satisfactory
1 Jan–31 Dec 2011	Satisfactory	Satisfactory
1 Jan–30 Jun 2012	Satisfactory	Satisfactory

Q = quarter.

#### D. Data on Asian Development Bank Missions

Name of Mission	Date	No. of Persons	No. of Person-Days	Specialization of Members <sup>a</sup>
Fact-finding	16 Aug–3 Sep 2004	6	114	a, b, c, d, g, j
Appraisal	21 Mar–1 Apr 2005	6	66	a, b, c, d, g, j
Inception	7–9 Jun 2006	3	6	a, b, c
Review	13–17 Nov 2006	2	8	a, c
Review	7–9 May 2007	2	4	a, c
Review	3–7 Dec 2007	1	4	c
Review	7–15 Apr 2008	1	8	c
Review	11–16 Aug 2008	1	5	c
Midterm review	24 Nov–4 Dec 2009	4	44	a, c, f, k
Review	9–23 Jul 2009	1	14	c
Special review	28 Sep–3 Oct 2009	2	14	c, g
Review	21–31 Jan 2010	1	10	c
Review	16–28 Apr 2010	1	12	c
Special review	21–24 Jun 2010	2	6	c, k
Review	23 Feb–4 Mar 2011	1	11	c
Review	16–26 May 2011	1	10	c
Review	10–22 Oct 2011	1	8	c
Safeguards review	28 Nov–2 Dec 2011	2	8	b, g
Special review	15–21 Dec 2011	1	6	c
Review	8–20 Mar 2012	2	24	c, f
Review	16–31 Dec 2012	2	30	c, f
Project completion review <sup>b</sup>	18–28 Jul 2013	4	40	c, f, l

<sup>a</sup> a = transport specialist, b = operations officer, c = project implementation officer, d = financial specialist, e = procurement consultant or specialist, f = project analyst, g = safeguards specialist, h = safeguard officer, i = counsel, k = portfolio specialist, l = consultant.

<sup>b</sup> The project completion review mission comprised Le Dinh Thang, Senior Project Officer/Mission Leader, Viet Nam Resident Mission (VRM), Le Thu Huong, Associate Project Analyst, VRM, and two transport economists (one international staff consultant and one national staff consultant).

**BASIC DATA**  
**Grant No. 0022-VIE**

**A. Grant Identification**

1.	Country	Viet Nam
2.	Grant Number	0022-VIE
3.	Project Title	VIE: Central Region Transport Networks Improvement Sector
4.	Borrower	Socialist Republic of Viet Nam
5.	Executing Agency	Ministry of Transport
6.	Amount of Grant	\$500,000
7.	Project Completion Report Number	PCR: VIE 1419

**B. Grant Data**

1.	Appraisal	
	– Date Started	21 March 2005
	– Date Completed	1 April 2005
2.	Grant Negotiations	
	– Date Started	10 October 2005
	– Date Completed	11 October 2005
3.	Date of Board Approval	11 November 2005
4.	Date of Grant Agreement	30 November 2005
5.	Date of Grant Effectiveness	
	– In Grant Agreement	28 February 2006
	– Actual	28 February 2006
	– Number of Extensions	0
6.	Closing Date	
	– In Grant Agreement	31 December 2010
	– Actual	4 October 2011
	– Number of Extensions	1
7.	Terms of Grant	
	– Interest Rate	Not applicable
	– Maturity (number of years)	
	– Grace Period (number of years)	
8.	Disbursements	

a. Dates

Initial Disbursement	Final Disbursement	Time Interval
7 August 2007	4 October 2011	50 months
Effective Date	Original Closing Date	Time Interval
28 February 2006	31 December 2012	82 months

## b. Amount (\$ million)

<b>Category</b>	<b>Original Allocation</b>	<b>Last Revised Allocation</b>	<b>Amount Disbursed</b>	<b>Undisbursed Balance<sup>a</sup></b>
01 Consulting services	0.500	0.500	0.426	0.074
<b>Total</b>	<b>0.500</b>	<b>0.500</b>	<b>0.426</b>	<b>0.074</b>

<sup>a</sup> An undisbursed grant amount of \$73,950.55 was cancelled at grant closing date of 4 October 2011.

9. Local Costs (Financed)		Appraisal	Actual
-	Amount (\$ million)	0.200	0.170
-	Percent of Local Cost	0.004	0.003
-	Percent of Total Cost	0.001	0.001

**C. Project Data**

## 1. Project Cost (\$ million)

<b>Cost</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
Foreign Exchange Cost	85.00	81.05
Local Currency Cost	53.00	57.98
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

Note: Figures may not sum precisely because of rounding.

## 2. Financing Plan (\$ million)

<b>Cost</b>	<b>Appraisal Estimate</b>	<b>Actual</b>
<b>Implementation Costs</b>		
Borrower Financed	32.00	29.33
ADB Financed (ADF Loan)	91.40	93.24
ADB Financed (ADF Grant)	0.50	0.43
NDF Finance	11.00	14.43
<b>Total</b>	<b>134.90</b>	<b>137.43</b>
<b>IDC Costs</b>		
Borrower Financed	0.00	0.00
ADB Financed (ADF Loan)	3.10	1.61
ADB Financed (ADF Grant)	0.00	0.00
NDF Financing	0.00	0.00
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

ADB = Asian Development Bank, ADF = Asian Development Fund, IDC = interest during construction, NDF = Nordic Development Fund.

### 3. Cost Breakdown by Project Component (\$ million)

Component	Appraisal Estimate	Actual
A. Civil Works <sup>a</sup>	102.20	119.83
B. Consulting services	12.10	15.15
Gender, HIV, and Anti-Trafficking Program	0.50	0.43
C. Environmental Mitigation <sup>b</sup>	3.80	0.00
D. Project Management	0.50	2.02
E. Taxes and Duties <sup>c</sup>	15.80	-
<b>Total Baseline Costs</b>	<b>134.90</b>	<b>137.43</b>
Interest during Construction	3.10	1.61
<b>Total</b>	<b>138.00</b>	<b>139.04</b>

HIV = human immunodeficiency virus.

<sup>a</sup> Includes allowances for land acquisition costs, contingencies, unexploded ordnance clearance, and support to PMU-1.

<sup>b</sup> Actual included in civil works contracts

<sup>c</sup> Estimated at 16% of civil works base cost.

Source: Asian Development Bank calculations.

### 4. Project Schedule

Item	Appraisal Estimate	Actual
<b>A. Consulting Services</b>		
1. Civil Works Preparation Services		
Start	Q1 2005	Q3 2005
Completion	Q3 2006	Q3 2007
2. Implementation Services		
Start	Q3 2005	Q3 2006
Completion	Q2 2009	Q3 2012
3. Gender, HIV, Anti-Trafficking Program		
Start	Q1 2006	Q1 2007
Completion	Q2 2009	Q3 2010
4. Institutional Development		
Start	Q3 2006	Q2 2008
Completion	Q2 2009	Q2 2010
<b>B. Civil Works</b>		
1. Phase 1		
Start	Q3 2005	Q3 2007
Completion	Q2 2008	Q4 2010
2. Phase 2		
Start	Q3 2006	Q3 2007
Completion	Q4 2008	Q4 2010
3. Phase 3		
Start	Q3 2006	Q3 2007
Completion	Q2 2009	Q2 2012
<b>Other Milestones</b>		
1. Minor change in financing arrangements on 30 January 2009		
2. Extension of closing date of loan 2195 to 30 June 2012 approved on 16 April 2010		
3. Grant 0022 financially closed and undisbursed amount of \$73,950.55 cancelled on 4 October 2011		
4. Loan 2195 financially closed and undisbursed amount of SDR3,991,407.80 (equivalent \$6,005,272.61) cancelled on 10 June 2013		

## 5. Project Performance Report Ratings

Implementation Period	Ratings	
	Development Objectives	Implementation Progress
11 Nov–31 Dec 2005	Satisfactory	Satisfactory
1 Jan–31 Dec 2006	Satisfactory	Satisfactory
1 Jan–31 Dec 2007	Satisfactory	Satisfactory
1 Jan–31 Dec 2008	Satisfactory	Satisfactory
1 Jan–31 Dec 2009	Satisfactory	Satisfactory
1 Jan–31 Dec 2010	Satisfactory	Satisfactory
1 Jan–31 Dec 2011	Satisfactory	Satisfactory
1 Jan–30 Jun 2012	Satisfactory	Satisfactory

Q = quarter.

## D. Data on Asian Development Bank Missions

Name of Mission	Date	Number of Persons	Number of Person-Days	Specialization of Members <sup>a</sup>
Fact-finding	16 Aug–3 Sep 2004	6	114	a, b, c, d, g, j
Appraisal	21 Mar–1 Apr 2005	6	66	a, b, c, d, g, j
Inception	7–9 Jun 2006	3	6	a, b, c
Review	13–17 Nov 2006	2	8	a, c
Review	7–9 May 2007	2	4	a, c
Review	3–7 Dec 2007	1	4	c
Review	7–15 Apr 2008	1	8	c
Review	11–16 Aug 2008	1	5	c
Midterm review	24 Nov–4 Dec 2009	4	44	a, c, f, k
Review	9–23 Jul 2009	1	14	c
Special review	28 Sep–3 Oct 2009	2	14	c, g
Review	21–31 Jan 2010	1	10	c
Review	16–28 Apr 2010	1	12	c
Special review	21–24 Jun 2010	2	6	c, k
Review	23 Feb–4 Mar 2011	1	11	c
Review	16–26 May 2011	1	10	c
Review	10–22 Oct 2011	1	8	c
Safeguards review	28 Nov–2 Dec 2011	2	8	b, g
Special review	15–21 Dec 2011	1	6	c
Review	8–20 Mar 2012	2	24	c, f
Review	16–31 Dec 2012	2	30	c, f
Project completion review <sup>b</sup>	18–28 Jul 2013	4	40	c, f, l

<sup>a</sup> a = transport specialist, b = operations officer, c = project implementation officer d = financial specialist, e = procurement consultant or specialist, f = project analyst, g = safeguards specialist, h = safeguard officer, i = counsel, k = portfolio specialist, l = consultant.

<sup>b</sup> The project completion review mission comprised Le Dinh Thang, Senior Project Officer/Mission Leader, VRM, Le Thu Huong, Associate Project Analyst, VRM, and two transport economists (one international staff consultant and one national staff consultant).



## I. PROJECT DESCRIPTION

1. The central region of Viet Nam has strikingly high levels of rural poverty. This is partly because of the remoteness of many communities and their poor links to the rest of the economy, including a lack of transport connections through all-weather roads. The dearth of all-weather provincial and district roads has isolated poor rural communities from provincial and national markets and, ultimately, from the benefits of economic growth. The Central Region Transport Networks Improvement Sector Project was proposed to remove transport constraints on economic and social development in rural areas of the central region of Viet Nam.<sup>1</sup>

2. The objective of the project was to improve access to markets, employment opportunities, and social services by removing constraints on economic and social development in rural areas of the central region of Viet Nam and inducing more efficient and cost-effective movement of passengers and goods in those areas. At appraisal, the project had two components: (i) network improvements to about 1,200 kilometers (km) of roads connecting selected rural areas with district and provincial centers in the 19 provinces of the central region and (ii) institutional development to improve the management of provincial road networks, as set out in the provincial roads policy action plan. Appendix 1 compares the project framework at appraisal with the achievements of the project.

## II. EVALUATION OF DESIGN AND IMPLEMENTATION

### A. Relevance of Design and Formulation

3. The project was developed in accordance with the country strategy and program update of the Asian Development Bank (ADB), approved in August 2005.<sup>2</sup> The strategy emphasized generating economic growth with a focus on the central region. The Government of Viet Nam's Comprehensive Poverty Reduction and Growth Strategy (CPRGS), approved in May 2002;<sup>3</sup> the Poverty Reduction Partnership Agreement with ADB;<sup>4</sup> and the Transport Master Plan<sup>5</sup> all included the development and rehabilitation of the transport system as a key element of poverty reduction efforts. The CPRGS notes that improvements are needed at all levels of the transport network, and it specifically identified the need to connect poor rural areas with all-weather roads. The project design was consistent with the strategic objectives of both the CPRGS and the country strategy and program update. The project was formulated based on the findings of project preparatory technical assistance (PPTA).<sup>6</sup>

---

<sup>1</sup> ADB. 2005. *Report and Recommendation of the President to the Socialist Republic of Viet Nam for the Central Region Transport Networks Improvement Sector Project*. Manila.

<sup>2</sup> ADB. 2005. *Country Strategy and Program Update (2006–2008): Viet Nam*. Manila.

<sup>3</sup> Socialist Republic of Viet Nam. 2003. *The Comprehensive Poverty Reduction and Growth Strategy*. Ha Noi

<sup>4</sup> The Poverty Reduction Partnership Agreement, signed on 25 February 2002 by ADB and the government, covers a subset of the objectives set out in the CPRGS, whose preparation ADB supported as a member of the Poverty Task Force (ADB. 2002. *Poverty Reduction Partnership Agreement between the Socialist Republic of Viet Nam and the Asian Development Bank*).

<sup>5</sup> Socialist Republic of Viet Nam. 2004. *Transport Master Plan to 2005–2020*. Document No. 206/2004-TTg (10 December 2004). Ha Noi.

<sup>6</sup> The PPTA was financed from the Japan Special Fund, funded by the Government of Japan (ADB. 2002. *Technical Assistance to the Socialist Republic of Viet Nam for the Preparation of the Central Region Network Project*. [TA 4034-VIE] Manila).

4. The project was prepared and implemented using a sector approach, in which subprojects were to be selected on the basis of pre-agreed criteria.<sup>7</sup> At appraisal, the civil works were to be implemented in three phases. Phase 1 covered road networks in 4 provinces,<sup>8</sup> Phase 2 covered 5 provinces,<sup>9</sup> and Phase 3 covered the remaining 10 provinces.<sup>10</sup> Under the PPTA, each province was asked to provide a long list of provincial and district roads requiring upgrading or rehabilitation. These lists were screened and ranked using simple social and economic indicators. The resulting prioritized list of roads was compiled into a provincial road sector development plan for each of the 19 provinces.

5. The project was highly relevant to the needs of the transport sector because it supported vital improvements in infrastructure, and provided institutional development to strengthen the government's ability to improve management of provincial road networks as set out in the provincial roads policy action plan. The design and formulation of the project was highly relevant at appraisal and remained so at project completion.

## **B. Project Outputs**

6. At appraisal, the project scope comprised two components: (i) network improvements to improve about 1,200 km of roads to Viet Nam single-lane (Class V) or two-lane (Class IV) standard with 1 meter strengthened shoulders in 19 provinces; and (ii) institutional development to improve the management of provincial road networks. A brief discussion of the outputs is given below.

7. **Network improvements.** At appraisal, the expected output under this component was the improvement of about 1,200 km of roads. All roads were to be rehabilitated with a sealed surface. The civil works also included repair, replacement, or construction of bridges and culverts, either as part of the improvements or as separate subprojects. The actual output was 729.73 km of roads, including bridges and drainage structures.

8. Due to high rates of inflation and a depreciation of the Vietnamese currency, it became evident that the allocated funding would not be sufficient. The appraisal target of 1,200 km was therefore reduced to 675 km. In early 2009, however, it transpired that some unallocated funds from the loan would be available. This allowed eight subprojects, which had been left out due to funding constraints, to be re-included. An additional three new subprojects were also taken on. As a result, a total of 729.73 km of roads were improved. Due to the limited amount of time remaining to undertake this additional work (the cut-off date for the extended loan agreement was 30 June 2012 (para.21), Project Management Unit number 1 (PMU-1) received approval to extend the ongoing contracts to incorporate the re-included subprojects and direct contracting for the new subprojects, rather than go for the normal tendering and evaluation procedures in order to save time.

9. In accordance with the government regulations, the completed provincial roads, were handed over to the provincial departments of transport (PDOTs) for operation and maintenance, and the district roads were turned over to the district people's committees. Several of the

<sup>7</sup> To be eligible for financing under the project, subprojects had to be (i) technically justified and economically viable, (ii) environmentally and socially responsible, (iii) part of the provincial road sector development plan, and (iv) in compliance with all applicable ADB policies.

<sup>8</sup> Binh Thuan, Lam Dong, Nghe An, and Thua Thien Hue provinces.

<sup>9</sup> Dak Lak, Dak Nong, Ha Tinh, Ninh Thuan, and Quang Tri provinces.

<sup>10</sup> Binh Dinh, Da Nang, Gia Lai, Khanh Hoa, Kon Tum, Phu Yen, Quang Nam, Quang Binh, Quang Ngai, and Thanh Hoa.

improved project roads in different provinces were visited and examined. All of them were found to be in good condition. Discussions with provincial and district office staff determined that the roads visited had been maintained well.

10. **Institutional development.** At appraisal, this component was to improve the management of provincial road networks. A total of 10 provinces were targeted.<sup>11</sup> The activities included technical assistance to help the PDOTs carry out core road management activities.<sup>12</sup> With consultant assistance, the PDOTs were to (i) prepare provincial road network plans; (ii) implement provincial road maintenance management processes; (iii) increase the implementation efficiency of periodic maintenance plans by introducing competitive bidding; (iv) establish resettlement, social, and environmental capacity; and (v) set up a pilot provincial road safety program in three provinces. Training of PDOT staff and basic equipment were also to be provided to support the technical assistance.

11. Many reports (a total of 25 reports and 14 documents for procurement contracts), manuals, guidelines and training materials, including software, were produced and distributed to the PDOTs for reference and use during the training workshops and in their day-to-day activities, during implementation of the component.

12. The activities covered by this component were as follows:

- (i) Assist the PDOTs in introducing more effective road maintenance management planning procedures, thereby enabling them to prepare integrated road network plans covering all classes of road. This was done with the RoSy Pavement Management System (PMS) and Viet Nam Bridge Management System software.
- (ii) Assist the PDOTs in implementing effective road maintenance management systems in 10 provinces. This was also done with the RoSy PMS and Viet Nam Bridge Management System software.<sup>13</sup>
- (iii) Assist PDOTs in introducing road safety procedures in 10 provinces by training selected engineers from the PDOTs to undertake road safety audits, and increasing their understanding of road safety in general. Three road safety audit workshops were held. It was not possible to interface with the World Bank Road Safety Project because this component commenced too late for the effective transfer of information to the PDOTs.
- (iv) Carry out a detailed training needs assessment and submit a report with training recommendations. Training workshops for PDOT staff in the 10 provinces were held on the technical activities required to support road planning, maintenance, and safety programs.
- (v) Assist the PDOTs in identifying and procuring suitable office equipment, and road and bridge survey equipment, to support the institutional development programs. The PDOTs were supplied with equipment for use in managing the planning and maintenance of the provincial road networks.

<sup>11</sup> Binh Thuan, Da Nang, Dak Lak, Dak Nong, Gia Lai, Lam Dong, Khanh Hoa, Kon Tum, Quang Nam, and Ninh Thuan. .

<sup>12</sup> The technical assistance was designed to be consistent with the proposed assistance to 32 PDOTs under the Rural Transport 3 Project, funded by the Department for International Development (DFID) of the United Kingdom. Under the institutional development component of the Central Region Transport Networks Improvement Sector Project, ADB will assist 10 central region provinces. Assistance to the remainder will be given under the DFID-funded program. Training of PDOT staff and basic equipment will be provided to support the technical assistance .

<sup>13</sup> Although the consultant introduced RoSy PMS software, some PDOTs now consider it not appropriate for Viet Nam's road system. They now use the World Bank's system—the Viet Nam Provincial Roads Maintenance Management System from the Rural Transport Project 3.

13. The project also included a component for a gender, HIV/AIDS, and anti-trafficking program. The rationale for the program is that improved road access to communities in remote areas may make inhabitants vulnerable to HIV/AIDS, other infectious diseases, and human trafficking unless adequate measures are taken. The component was implemented by consultants over a 3-year period (para. 36). It focused on working with construction workers and local communities to raise awareness on these issues. The following activities were undertaken: (i) 160 workshops were held in 15 provinces for 2,500 construction workers;<sup>14</sup> (ii) 12 provinces undertook education with a total of 240 participants to share information on HIV/AIDS, trafficking and safe migration, and vulnerable populations;<sup>15</sup> and (iii) workshops were held for a total of 1,000 ethnic minority women to discuss issues such as HIV/AIDS risk situations, labor migration, and trafficking. A total of nine provinces were covered in the first year of the component (provinces in phases 1 and 2) in 2009 and 2010. The ten Phase 3 provinces were covered from late 2009.

### C. Project Costs

14. At appraisal, the project cost was estimated to be \$138.0 million equivalent, inclusive of taxes, duties, and interest during implementation. Foreign exchange costs were estimated at \$85.0 million equivalent (61.6%) and local currency costs were estimated at \$53.0 million equivalent (38.4%). The ADB loan was for \$94.5 million equivalent from ADB's Special Funds resources (the Asian Development Fund [ADF]), and a grant of \$0.5 million equivalent from the ADF to finance 68.8% of the total project cost. The ADF loan was to finance road rehabilitation, civil works preparation consulting services, and interest during construction. The ADF grant was to be used to finance consulting services for the Gender, HIV/AIDS, and Anti-Trafficking Program. The government was to meet 23.2% of the total project cost in local currency. The Nordic Development Fund (NDF) provided cofinancing on a parallel financing basis<sup>16</sup> with a loan of 8.3 million euros (€) (\$11.0 million equivalent)<sup>17</sup> to cofinance part of the cost of the consulting services for implementation and institutional development. On 22 May 2006 the NDF agreed to an addendum to increase its financing by €3.3 million to cover higher costs of consulting services for implementation, bringing the total loan to €11.6 million (\$14.4 million equivalent).

15. The actual project completion cost was \$139.04 million equivalent, with a foreign exchange cost of \$81.05 million (58.3%), and a local currency cost of \$57.98 million (41.7%). ADB financed \$95.28 million equivalent<sup>18</sup> (68.5%) of the total project cost, and the NDF funded \$14.43 million (10.4%) of the total.<sup>19</sup> The government funded the remaining local project costs of \$29.33 million equivalent (21.1% of total project costs).

16. The estimated cost at appraisal for the road network improvement component was \$115.10 million (including physical and price contingencies, environmental mitigation costs, and taxes).<sup>20</sup> The actual cost of the improvements was \$106.70 million (environmental mitigation costs were included in the civil works contracts). The average rehabilitation cost estimated at appraisal was \$95,917 per km (\$115.10 million divided by 1,200 km), compared to an actual

<sup>14</sup> The average number of workshops per province was 6, and 60–380 people participated in each province.

<sup>15</sup> An average of 20 people per province participated. Most of the workshops were of 2 days' duration and 2 provinces had a second training session for a further day.

<sup>16</sup> NDF Credit No. 442.

<sup>17</sup> At appraisal, March 2005.

<sup>18</sup> A total of \$94.85 million from Loan 2195 and \$0.43 million from Grant 0022.

<sup>19</sup> ADB's financing consisted of \$94.85 million from Loan 2195 and \$0.43 million from Grant 0022.

<sup>20</sup> Civil works costs were estimated at appraisal as \$95.50 million plus \$15.80 million in taxes (estimated at 16% of the civil works costs) and \$3.80 million in environmental mitigation costs for a total of \$115.10 million.

cost of \$146,218 per km (\$106.70 million divided by 729.73 km). The large increase in cost per km is attributable to the high rate of inflation and the depreciation of the Vietnamese currency (para 8). Typical unit costs per km were about \$162,000 for Class IV roads and \$112,000–\$126,000 for Class V roads. The total expenditure on consulting services also increased. The appraisal estimate for consulting services was \$1.9 million for civil works preparation; \$8.0 million for implementation; \$1.7 million for institutional development; \$0.5 million for ethnic minority development; and \$0.5 million for the gender, HIV/AIDS, and anti-trafficking program; for a total expenditure of \$12.6 million. The actual cost of consulting services was \$1.93 million for civil works preparation; \$11.15 million for implementation; \$1.62 million for institutional development; \$0.45 million for ethnic minority development; and \$0.43 million for gender, HIV/AIDS, and anti-trafficking; for a total expenditure of \$15.58 million. The increase in overall consultant services costs is attributable to the increase in implementation services due to delays in implementing the civil works (para. 23).

17. The actual detailed costs for each component of the project compared with the appraisal estimates are in Appendix 2. The local currency costs incurred have been converted into US dollars at the rate prevailing during each transaction. The average rates of exchange used are in Appendix 3. A summary of contracts financed by ADB is in Appendix 4.

#### **D. Disbursements**

18. No disbursement schedule was included at appraisal. However, based on the implementation schedule prepared, the projected disbursements were developed and are shown in Appendix 5, along with the actual disbursements that took place during implementation. Loan proceeds were disbursed in accordance with ADB's *Loan Disbursement Handbook*. A first-generation imprest account was opened by PMU-1 and second-generation imprest accounts were established for three delegated provinces, as envisaged at appraisal, for the purpose of piloting.<sup>21</sup> Consulting services contracts were disbursed through direct payment procedures as envisaged at appraisal.

19. There was a minor change in the financing arrangements. It was proposed at appraisal that the ADB loan would finance 90.4% of the civil works base costs, among other items. The remaining 9.6% of the base costs and all taxes and duties were to be funded by the government. For the loan allocation table, the assumption was made that the contract price for all civil works contracts would include all taxes and duties. The percentage allocation of ADB financing to civil works was calculated at 78% of total expenditure, and the remaining 22% was to be funded by the government. However, in August 2008, PMU-1 contacted ADB to report that the civil works contracts awarded to date did not include 10% value-added tax. Thus the civil works contract amounts were only 90.9% of the total expenditure for each contract, and the allocation of ADB expenses for civil works was less than that proposed at appraisal. To correct this discrepancy, a minor change in financing arrangements was proposed to revise Category 1A Civil Works—Roads so that the percentage of ADB financing increased to 86%. ADB approved this revision on 23 January 2009.

<sup>21</sup> On 16 January 2009, PMU-1 requested an increase in the ceiling of the first-generation imprest account from \$5 million to \$7 million. ADB approved the request on 17 September 2009. On 8 August 2008, a request was made to increase the designed initial deposit to the second-generation imprest accounts that were to be opened for three delegated provinces (Da Nang, Quang Ngai, and Thanh Hoa) under Phase 3 from \$100,000 to \$500,000. As the initial deposit was no longer practical for advance payments, ADB had no objection and approved the increase on 28 August 2008.

20. The loan and grant were disbursed slower than was envisaged at appraisal due to project implementation delays. Following the final disbursement of Loan 2195 on 28 May 2013, the undisbursed balance of SDR3,991,407.80 (\$6,005,272.61 equivalent) was cancelled on 10 June 2013—the actual date of loan closing. For Grant 0022, the undisbursed balance of \$73,950.55 was cancelled on 4 October 2011. NDF Credit No. 442 had an undisbursed balance of \$499,257.67 equivalent. As all implementation services payments had been completed, this was cancelled on 22 February 2013.

## **E. Project Schedule**

21. The ADB Board approved the loan and grant on 11 November 2005, and they became effective on 28 February 2006. The original loan-closing date of 31 December 2010 was extended until 30 June 2012 due to implementation delays. NDF Credit No. 442 was approved on 9 June 2005 and the agreement was signed on 30 December 2005. The closing date was 31 December 2010. An extension to the NDF loan, at the request of the borrower on 14 February 2012, was agreed to by the NDF on 23 March 2012. The closing date of the NDF loan was extended to 31 January 2013.

22. Nationwide increases in price escalation rates had a critical impact on project implementation by raising the prices of construction materials. This disrupted the smooth progress of subproject implementation and reduced the overall project's scope.

23. Project implementation was held up by (i) delays in an agreement on pavement structure between ADB and the Ministry of Transport (MOT);<sup>22</sup> (ii) revision of the subprojects that were to be implemented because of the budget constraint caused by high inflation;<sup>23</sup> (iii) delay in the completion of social safeguard reports;<sup>24</sup> (iv) inefficient coordination by the parties concerned, which lengthened the decision-making process; (v) poor performance of contractors; (vi) initial slow preparations and proposals on variations and decisions, (vii) the addition of 21 new contracts and contract addendums late in the project; and (viii) unfavorable weather conditions in the central region during 2007–2009.<sup>25</sup>

24. By the end of July 2009, the overall physical implementation progress was estimated at 50%, while 70% of the loan period had elapsed. The lack of completion of resettlement and compensation activities, particularly in Ha Tinh and Dak Nong provinces (Phase 3 implementation), was a major cause of construction delays. Another critical issue was the delays in finalizing and submitting resettlement plans and initial environmental examinations

---

<sup>22</sup> In December 2006, meetings were held to discuss the design of subproject roads. ADB's position on design criteria was that the standard pavement construction for provincial and other low-volume roads should be a graded, crushed aggregate base and sub-base with double bituminous seal treatment. During detailed design, proposals were made for pavements to be constructed using a macadam base with a triple bituminous surface treatment, subject to an assessment of the suitability of this surface in some subprojects. In January 2007 a revised design report was submitted to ADB, which was accepted.

<sup>23</sup> From the commencement of procurement in June–July 2007 to contract award for Phase 1 civil works in December 2007–January 2008, price escalation resulted in cost increases of about 20%. The budget allocated for phase 1 subprojects became insufficient to complete the scope of several subprojects, in terms of ensuring interconnectivity.

<sup>24</sup> Phase 2 contract awards were delayed due to delays in the finalization, submission, and approval of social safeguard reports, including both resettlement plans and initial environmental examinations.

<sup>25</sup> In September 2009 there were also heavy rains in several project provinces (northern central, central, and highlands) causing serious damage to almost all ongoing subprojects and contracts. In addition, typhoon No. 9 (international name: Ketsana) struck the project area and caused serious damage.

(IEEs) due to (i) their poor quality;<sup>26</sup> and (ii) inadequate coordination between the parties concerned, including PMU-1, the implementation consultant, provincial project management units (PPMUs), and local authorities, which delayed the approval of technical designs, cost estimates, bidding documents, and social safeguard reports of subprojects.

25. Project implementation was about 12 months behind schedule, and thus a loan extension was requested. On 16 April 2010, ADB approved the borrower's request for an 18-month extension of the original loan-closing date of 31 December 2010 to 30 June 2012 to allow for completion of all Phase 3 contracts and the remaining project activities.

26. Benefit monitoring and evaluation (BME), which was omitted in the original terms of reference for project implementation services, and an ethnic minority development plan (EMDP) were held up for more than 2 years due to delays in the signing of an addendum between PMU-1 and the NDF.<sup>27</sup> The addendum provided positions for both BME and EMDP consultants, and covered the implementation consultant's services until the revised closing date of 30 June 2012. The addendum was signed in mid-February 2011.

27. Appendix 6 compares the actual and appraisal implementation schedules and Appendix 7 lists the chronology of major implementation events for Loan 2195 and Grant 0022.

## **F. Implementation Arrangements**

28. The implementation arrangements were as envisaged at appraisal. The borrower was the Socialist Republic of Viet Nam and the MOT was the executing agency. Planning and coordination was delegated to PMU-1, which had implemented several ADB-financed projects. PMU-1 was responsible for procurement and awarding of consultant and civil works contracts. The PDOTs were the implementing agencies in their respective provinces. The PDOTs established PPMUs with responsibility for day-to-day administration of civil works contacts.<sup>28</sup> The PPMUs were adequately staffed with 18–40 employees. The PDOTs were supported and assisted by PMU-1 and the project consultants in the management and implementation of civil works and resettlement plans, and the preparation of subprojects. Project coordination was the responsibility of the Vice-Minister of Transport assigned to the project. As envisaged at appraisal, the project was implemented through separate subprojects in three phases. To supervise the civil works in all three phases, a project management office was set up in Da Nang with a project manager, who also acted as regional engineer in the Da Nang Region. Regional offices were also set up in the cities of Buon Ma Thuot, Nha Trang, and Vinh. Counterparts appointed by PMU-1 were based in all regional offices, and the chief counterpart was at the project management office. Each office had a regional engineer with an assistant and support staff.

29. On completion of phase 1 and 2 subprojects, PMU-1 closed all regional offices and transferred the regional engineers, assistants, and most of the support staff to the project

<sup>26</sup> A special loan review mission visited four provinces in September 2009 to review, discuss, and work out with PMU-1 and relevant PPMUs and local authorities, as and when needed, practical measures for resolving the pending resettlement issues. Contractors' performance was also reviewed and discussions were held with PMU-1 and/or relevant PPMUs on necessary measures, including contract cancellation. A review was also made of the status of finalization and submission of the remaining resettlement plans and IEEs under Phase 3 provinces.

<sup>27</sup> No projects under the EMDPs had been implemented by September 2009.

<sup>28</sup> This was in line with the government's policy to decentralize project responsibilities to the provinces.

management office in Da Nang, which then managed all contracts.<sup>29</sup> Simultaneously, all counterpart positions were closed, except for that of chief counterpart, who was relocated to PMU-1 in Ha Noi. This arrangement improved the working relationship and coordination between all parties, and also helped to shorten the decision time for variation orders.

## **G. Conditions and Covenants**

30. Details of compliance with the major covenants under the loan and grant are in Appendix 8. The government and the executing agency generally complied with all major covenants, as well as ADB's Anticorruption Policy and its provisions, which were included in the loan regulations and bidding documents for the project. However, late provision of counterpart funds delayed civil works payments, and resettlement and compensation expenses.<sup>30</sup> Insufficient compliance with environmental safeguards prompted a safeguards review mission during 28 November–2 December 2011. The mission noted that the project generally complied with the environmental assessment and review procedure, but project responsiveness could have been further improved by including provisions in the consultant's contract to ensure (i) adequate monitoring of environmental management plans, (ii) environmental monitoring during operations, and (iii) periodic reporting to ADB on implementation of the environmental management plans.

## **H. Related Technical Assistance**

31. No related technical assistance was associated with the project.

## **I. Consultant Recruitment and Procurement**

### **1. Consultant Recruitment**

32. Consultant recruitment was undertaken in accordance with ADB's *Guidelines on the Use of Consultants* for ADB-funded consultants and NDF guidelines for NDF-funded consultants. At appraisal, the consulting services were divided into four packages. The consulting services were required to assist in (i) selection of subprojects, preparation of implementation documentation, and assistance in bidding; (ii) construction supervision, including preparation and implementation of resettlement plans, EMDPs, HIV/AIDS and sexually transmitted infection awareness and prevention programs, and IEEs with environmental management plans; (iii) institutional strengthening and capacity building for provincial agencies in the administration and management of the provincial road networks; and (iv) preparing and implementing provincial road safety programs. Although ADB agreed on advance action for the recruitment of consultants, there was a delay in finalizing the selection process for some of the consultants. The four consulting services packages are described in paras. 33–37.

33. **Civil works preparation consulting services.** As envisaged at appraisal, the PPTA consultants were selected for this component as they had successfully completed the services under the PPTA. Recruitment was based on direct selection procedures. The contract was

<sup>29</sup> At the same time the MOT issued a revised regulation delegating most of the daily management of subproject implementation to the PPMUs.

<sup>30</sup> In 2011, a total of D134 billion was required as planned by PMU-1 and the PDOTs. At the end of June 2011, only D70 billion had been provided and disbursed, leaving a shortfall of D64 billion. On 8 November 2011, ADB requested the executing agency to pay the counterpart funds of D64 billion outstanding for 2011 and to ensure that D115 billion for the counterpart funds for 2012 were provided in the first 6 months of 2012, as required. By July 2012 the counterpart funds were still delayed, with D60 billion being required for 2012.

signed on 19 September 2005. Due to delays in implementation, the contract of the consultant was extended to 31 August 2007 to accommodate the finalization of the updated Phase 1 resettlement plans, including ethnic minority plans, and IEEs.

34. **Project implementation services.** These services were funded by the NDF. The services included the preparation of implementation documents for Phase 3 and construction supervision for all phases. The NDF approved the contract with the selected consultant on 17 November 2006 and the consultant commenced work on 1 December 2006. Due to the delays in implementation described in para. 23, the consulting services were extended until 30 June 2012, the date of loan closing.

35. **Institutional development services.** The consultants undertaking these services were funded by the NDF. These services were to prepare and implement institutional strengthening, capacity building, and road safety programs for the provincial agencies responsible for administering and managing the provincial road networks. The contract was signed on 8 April 2008 and the consultants were mobilized in May 2008.

36. **Gender, HIV, and Anti-Trafficking Program.** These services, funded by the ADB grant, included the design and implementation of a program to target project communities in all three phases of the project. Quality- and cost-based selection procedures were applied. The PMU-1 financial evaluation report was approved by ADB on 5 December 2006. The ADB were requested to extend the validity of the consultant's proposal until 5 March 2007 in order to complete contract negotiations and contract signing with the consultant's. The contract was signed in June 2007 and the consultants were mobilized in September 2007.

37. In addition to the four packages, the government recruited and funded consulting services for external monitoring of resettlement implementation and unexploded ordnance clearance. Recruitment for these services was based on government procedures for the recruitment of consultants. Consultant services commenced in January 2007.

## 2. Procurement

38. The procurement under the project was carried out in accordance with ADB's *Guidelines for Procurement*, as envisaged at appraisal. Detailed procurement procedures and sample procurement documentation followed the procedures used by the provincial road components of the ongoing Provincial Roads Improvement Project<sup>31</sup> and rural transport projects financed by the World Bank. Although advance procurement action was granted, it did not prevent delays.

39. Due to delays, the procurement of Phase 1 contracts was pushed back to December 2007 and early January 2008.<sup>32</sup> There were two civil works contracts under Phase 1 that had to be rebid as the bids were nonresponsive. These were later awarded in May 2008. Phase 2 contract awards were originally expected to be awarded by the third quarter of 2007 but were not awarded until the end of 2008 due to delays in the finalization, submission, and approval of social safeguard reports, including resettlement plans and IEEs (para 24). In Phase 3 subprojects, lack of coordination between provincial agencies, PMU-1, and the MOT in approving technical designs and cost estimates, bidding documents, and social safeguard

<sup>31</sup> ADB. 2001. *Report and Recommendation of the President to the Board of Directors on Proposed Loan to the Socialist Republic of Viet Nam for the Provincial Roads Improvement Project*. Manila (Loan 1888-VIE).

<sup>32</sup> At the inception mission it was planned to procure Phase 1 subprojects in July 2006 and award contracts in October and November 2006. Due to the changes in pavement design standards, the updated resettlement plans were delayed (para. 23 and footnote 22).

reports of subprojects caused delays. Phase 3 subprojects were awarded by the end of 2008 and in early 2009. A civil works contract for the construction and the provision of equipment for an operations office for PMU-1 in Da Nang was also procured using national competitive bidding procedures.

## **J. Performance of Consultants, Contractors, and Suppliers**

### **1. Consultants**

40. The assessment of the performance of the consultants is based on review missions and discussions with PMU-1, the PDOTs, and the PPMUs.

41. **Civil works preparation consulting services.** The civil works preparation consultants were responsible for subprojects in phases 1 and 2. Overall, the performance of the consultants was rated *satisfactory*.

42. **Project implementation consulting services.** Coordination and communication between PMU-1 and parties concerned (para 24), especially the implementation consultant, had been an ongoing issue in several review missions. This caused delay in preparation, review, and approval of technical design and working drawing changes, and for project implementation as a whole (para. 24). In 2009 there were delays in mobilizing international consultants for the project manager position and the provision of transport and office facilities for the regional engineers. Six project managers were involved for the implementation consultants, some of whom were replaced for reasons of performance and coordination and some were replaced for health reasons. Discussions with both PMU-1 and the PPMUs determined that the supervision services undertaken by the consultant were considered satisfactory. Overall, taking into account the initial coordination and communication problems, which caused delays, the performance of the project implementation consultants was rated *generally satisfactory*.

43. **Institutional development consulting services.** The performance of the consultants undertaking institutional development for the PDOTs was rated *satisfactory*. All PDOTs reported that the consultant team had undertaken extensive training (paras. 11–12) and that they appreciated the consultants' work.

44. **Gender, HIV, and anti-trafficking consulting services.** The implementation of this program by the consultants progressed well. In their inception report, the consultants recommended several adjustments to the designed training plan for provincial staff and survey activities under the program to reflect the situation of the delay in project implementation. These recommendations improved the impact of the plan and activities in the program and PMU-1, and they were supported by ADB. Overall, the performance of the consultants was rated *satisfactory*.

### **2. Contractors**

45. The midterm review mission in November 2008 and later review missions noted that the performance of some of the civil works contractors under phases 1 and 2 had been problematic with respect to joint-venture members' participation in contract implementation, capacity, and efficiency. All civil works contractors were evaluated regularly by the implementation consultants. Among the contractors with the lowest ranking there was a lack of site management, poor planning, and inadequate equipment. Of the 106 civil works contracts, 87 (82%) were rated *satisfactory*, 16 (15%) were rated *unsatisfactory*, and 3 (3%) were terminated

for reasons such as lack of financial management and poor quality of work. Based on discussions with PMU-1, the PDOTs, and the PPMUs, the overall performance of the contractors was rated *generally satisfactory*.

### **3. Suppliers**

46. The performance of the suppliers of equipment, both office equipment, and road and bridge survey equipment, were rated *satisfactory*.

### **K. Performance of the Borrower and the Executing Agency**

47. The performance of the borrower and the executing agency is rated *generally satisfactory*. PMU-1 was responsible for the planning and coordination, and effectively managed physical implementation of the project with the assistance of the supervision consultants. Although there was a delay in the provision of counterpart funds (para. 30 and footnote 30) and implementation of the civil works experienced considerable delays, the quality of the completed works is satisfactory. PMU-1 and the supervision consultants assisted the PDOTs and the PPMUs in the physical implementation of the project. In implementing the project the borrower and the executing agency acted to resolve issues and achieve the project's objectives.

### **L. Performance of the Asian Development Bank**

48. The project was originally administered and supervised from ADB headquarters but those functions were delegated to Viet Nam Resident Mission with effect from 1 January 2007 in line with ADB's Resident Mission Policy.<sup>33</sup> Two ADB project officers were involved in the implementation of the project. ADB conducted 1 inception mission, 13 review missions, 3 special review missions, 1 safeguards review mission, and 1 midterm review mission. The missions included visits to the project sites, and discussions with PMU-1 in coordination meetings to discuss and solve problems. PMU-1 recognized the role performed by the ADB missions in providing advice regarding technical issues, preparation and evaluation of bid documents, and matters of loan administration and found ADB's assistance adequate and timely. Overall, ADB's performance is rated *satisfactory*.

## **III. EVALUATION OF PERFORMANCE**

### **A. Relevance**

49. The project is rated *highly relevant*. The project was consistent with the government's development objectives and ADB's strategy in Viet Nam. ADB's strategy emphasizes (i) generating economic growth; and (ii) a focus on the central region, which is in line with the government's Comprehensive Poverty Reduction and Growth Strategy (CPRGS) and its emphasis on improvements at all levels of the transport network, especially connecting poor rural areas with all-weather roads.

### **B. Effectiveness in Achieving Outcome**

50. The project is rated *effective*. The outcome envisaged at appraisal under the network improvement component was the improvement of about 1,200 kilometers (km) of roads in 19 provinces in the central region. Due to high inflation and the depreciation of the Vietnamese

<sup>33</sup> ADB 2000. *Resident Mission Policy*. Manila.

currency, only 729.73 km of road were improved under the project. However, even though the total output under the project was reduced in terms of total road length, access to economic and social services, such as markets and employment opportunities, has been improved by introducing roads that have enabled more efficient and cost-effective movement of passengers and goods in the rural areas of the provinces. Under the component for institutional development, the PDOTs were introduced to computer software for pavement management systems and bridge management systems with appropriate training (paras. 11–12). Road safety procedures were also introduced into 10 provinces through training. Several training workshops were undertaken on the technical activities required to support the implementation of planning, maintenance, and road safety programs. An assessment of project impacts and benefits is in Appendix 9.

### **C. Efficiency in Achieving Outcome and Outputs**

51. The project is rated *efficient*. The economic internal rate of return (EIRR) of the project was reevaluated. The economic viability was assessed by computing all incremental benefits and costs resulting from project implementation. At appraisal, the EIRR was calculated for sample subprojects in several provinces for phases 1 and 2. It was not possible to reevaluate the exact same roads as at appraisal, as some of the roads were not constructed (para. 8).<sup>34</sup> A total of 14 road subprojects from 7 provinces were selected as a sample for the economic evaluation. These were deemed to be representative of the project as a whole<sup>35</sup>

52. The recalculated EIRR for the network improvement component of the selected subprojects is 27.1%. This is similar to the EIRR at appraisal of 22.3% for the original subset of representative project roads. The EIRR compares favorably with the economic opportunity cost of capital of 12%. The differences between reevaluation and appraisal are primarily because (i) a different methodology was used, i.e., different subproject roads were selected; (ii) the revised economic costs were derived from actual costs; (iii) the construction periods were longer because of implementation delays; and (iv) there were differences in traffic and traffic growth at appraisal and reevaluation. The recalculated EIRRs and supporting assumptions are in Appendix 10.

53. Efficiency is also assessed by the efficiency of the investment process. The project was extended from an original loan-closing date of 31 December 2010 to 30 June 2012 due to delays in project implementation. Although the implementation period was longer than originally intended, the outcome of the project as envisaged at appraisal has still been achieved. Taking account of both the economic evaluation and the implementation period, the project was rated *efficient*.

### **D. Preliminary Assessment of Sustainability**

54. Maintenance of the project facilities is essential to sustain their economic life. The government is committed to undertaking maintenance to ensure that its road assets have the maximum possible life. A road maintenance fund (RMF) was established on 13 March 2012, and 2013 is the first full year of its operation.<sup>36</sup> The RMF will collect annual fees from vehicle registrations. The MOT estimates that the fees in the fund will reach D4.5 trillion–D4.6 trillion

<sup>34</sup> At appraisal phase 1 and 2 roads totaled 544 km. The actual total of roads implemented under phases 1 and 2 was about 322 km, i.e., about 59% of the appraisal estimate.

<sup>35</sup> The total length of the roads in the sample, (228.56 km) represents 31% of the total kilometers (729.73 km) implemented under the project.

<sup>36</sup> Decree No. 18/2012/ND-CP

(\$214 million–\$219 million) every year.<sup>37</sup> Monies raised by the PDOTs will be channeled back to central government and then allocated to the PDOTs according to their needs.<sup>38</sup> The RMF is supplemented by annual budget allocations for road maintenance within each PDOT. The budget allocation in each province varies according to the length of roads to be maintained. Discussions with PDOTs indicated that total provincial road lengths to be maintained varied between about 365 km to 586 km. Budgets vary between D15 billion and D25 billion, depending on the province. Most PDOT's indicated that the budgetary allocation covered about 50% of maintenance needs. With the advent of the RMF, the PDOTs will have sufficient funds to maintain their road networks.

55. It is also essential that axle load control is enforced to ensure that roads are not damaged from overloaded trucks. To this end, the Prime Minister approved a master plan for weigh stations.<sup>39</sup> A total of 45 weigh stations are to be introduced during 2012–2030. The first phase of the program, to be implemented during 2012–2015, will build 13 weigh stations and set up 142 portable scales. The portable scales will be used at temporary sites for seasonal check points and temporary checkpoints on isolated roads frequented by trucks. After 2015, the remaining 32 weigh stations will be introduced.

56. Several of the project roads were examined and were found to be in good condition and well maintained. Overall, the project roads are considered *likely sustainable* due to the introduction of the RMF which, along with current PDOT budgets, will ensure that there is sufficient maintenance funding. In addition, the government's commitment to curbing overloaded freight vehicles through introducing weigh stations will also help to ensure the sustainability of the project roads.

## **E. Impact**

57. **Land acquisition and resettlement.** A resettlement policy framework and four resettlement plans for Phase 1 road subprojects were prepared at appraisal in accordance with ADB's Policy on Involuntary Resettlement.<sup>40</sup> During implementation, the resettlement plans were to be updated, and resettlement plans for phases 2 and 3 were to be prepared following detailed designs. Delays slowed down resettlement and compensation activities. Also, due to high inflation and the depreciation of the Vietnamese currency, the scope of the project had to be reduced and the construction of several roads was deferred. As a result, several of the resettlement plans had to be redone. In phases 2 and 3, coordination and quality deficiencies delayed the production of resettlement plans (para. 24). A special loan review mission on resettlement was undertaken in September 2009 to further investigate resettlement issues. The cost of land acquisition and resettlement increased significantly. At appraisal it was envisaged that the cost of land acquisition and resettlement would be \$4.90 million. The actual cost was \$12.28 million. None of the affected households lost their livelihood. Details of the total compensation and the numbers of people affected for each province are in Appendix 11, along with other details of the resettlement during project implementation.

58. **Environmental impact.** As envisaged at appraisal, the project did not have any significant adverse environmental impacts. Impacts were minimal because the civil works were

<sup>37</sup> This is a large amount given that the total state capital for maintaining the country's highway system was only D2.5 trillion (\$120 million) in 2012 (about 40% of requirements).

<sup>38</sup> The monies raised by the PDOTs for motorcycle registrations are kept by the PDOTs and only the annual vehicle fees for cars and trucks are sent to central government.

<sup>39</sup> Document No. 1502 / Qd- TTg dated 11 October 2012.

<sup>40</sup> The resettlement plans were for the provinces of Binh Thuan, Lam Dong, Nghe An, and Thua Thien Hue.

restricted to rehabilitating and upgrading existing roads along the same alignment, although short sections of new road would be constructed to improve alignments and address safety concerns. An IEE was undertaken at appraisal for sample subprojects.<sup>41</sup> This indicated that the negative environmental impacts were deemed to be minor, and mitigation measures and monitoring programs could be incorporated in the site-specific environmental management plans as part of the IEEs to address the potential impacts. IEEs were prepared for all subprojects during implementation and environmental mitigation actions were incorporated into each civil works contract. A safeguards review mission was undertaken to assess the implementation performance of the environmental management plans in selected subprojects, as well as the project's responsiveness to environmental loan covenants.<sup>42</sup> The mission concluded that the project generally followed environmental safeguard procedures during implementation and was generally responsive to environmental covenants.

59. **Social and ethnic minorities.** The project produced significant benefits and has helped to improve the economic, social, and living conditions of rural people in the provinces. The benefits include higher incomes and improved access to markets, schools, health facilities, and employment opportunities (Appendix 9). An ethnic minority development framework (EMDF) was prepared at appraisal to guide the preparation of the ethnic-minority-specific actions (EMSAs) and ethnic minority development plans (EMDPs) in accordance with ADB's Policy on Indigenous Peoples.<sup>43</sup> Appendix 11 gives further details on the impacts on ethnic minorities.

#### IV. OVERALL ASSESSMENT AND RECOMMENDATIONS

##### A. Overall Assessment

60. The project is rated *successful*, based on a review of its relevance, effectiveness, efficiency, and sustainability. Appendix 12 includes the quantitative assessment of project performance to determine the project rating.

##### B. Lessons

61. The division of the project into three phases caused several problems. First, the consultant's undertaking preparatory work for phases 1 and 2 were not the same as the construction supervision consultant's for all three phases who were also responsible for preparing Phase 3 subprojects. The construction supervision consultant's thus did not have any responsibility for the design of subprojects under phases 1 and 2. This became an issue after the consultant's that had done the preparatory work for phases 1 and 2 had completed their contract and left Viet Nam. Changed site conditions made it impossible for the contractors to follow the approved design, and so delays occurred. To ensure continuity, only one consultant both for supervision and design should have been selected. Second, it was noted at appraisal: "preparation of documentation and commencement of civil works for phases 2 and 3 will follow sequentially as individual tasks are completed under Phase 1." This meant that delays and changes in some subprojects in phases 1 and 2, led to delays in subsequent Phase 3

<sup>41</sup> A summary IEE was prepared and circulated to the ADB Board in May 2005.

<sup>42</sup> The ADB Environment and Safeguards Division mission took place during 28 November–2 December 2011. Its purpose was to strengthen ADB's ongoing support to Viet Nam's safeguard system and the Safeguard Policy Statement's provision on the application of country safeguard systems in ADB projects.

<sup>43</sup> The EMDF included other measures to address ethnic minorities, such as incorporation of road safety measures in road designs, an HIV/AIDS and sexually transmitted infections awareness and prevention program, and sustainable agricultural production.

subprojects. In future, this kind of conditionality should be avoided to prevent delays in implementation.

62. Third, in Phase 3, a total of three provinces were delegated full authority to implement subprojects in their provinces. This delegation included negotiations and signing of civil works contracts, approval of variation orders, changes to technical design, and approval of payments to the contractors. The time spent in solving changes in technical design and deciding on variations was significantly reduced, much to the benefit of the project. There was a feeling of local ownership to the subprojects in the delegated provinces. Delegated authority implied increased responsibility, which effectively put pressure on the PPMUs to solve issues fast that otherwise could hamper the progress and/or negatively affect the quality of the subprojects. Delegation to more provinces could have improved the implementation of the project and avoided some delays. ADB should consider more delegation in future similar projects if provinces have sufficient capacity to handle ADB procedures.

## **C. Recommendations**

### **1. Project Related**

63. **Maintenance, future monitoring, and follow-up action.** The maintenance of project facilities is critical to the long-term success of the project. Due to the rapid increase of heavy vehicles, some of which are overloaded, it is essential that axle-load limits are enforced. Axle-load weigh stations are now to be introduced as the Prime Minister has approved a master plan for 45 weigh stations to be introduced during 2012–2030. ADB should monitor the introduction of the weigh stations to ensure that the government monitors and enforces the axle-load limits. A sufficient maintenance budget must be provided to the PDOTs for the roads implemented to be maintained adequately. ADB should continue to regularly monitor the maintenance of the road improvements through the government's annual submission of budget allocations and through the funds allocated from the RMF. ADB should also coordinate with the World Bank and other development partners to ensure that road maintenance operations are being undertaken adequately.

64. **Covenants.** It is recommended that ADB conducts regular monitoring of loan covenants through consultant supervision to ensure compliance with environmental covenants as inadequate compliance with environmental safeguards prompted a safeguards review mission in 2011 (para. 30).

65. **Timing of project performance evaluation report.** It is recommended that a project performance evaluation is undertaken in another 2 years to determine if the project is still meeting its objectives.

### **2. General**

66. Maintenance of the provincial roads must be the top priority of the PDOTs to keep the network in good condition and help ensure social and economic growth in the rural areas. Local people could also be involved in some road maintenance work to promote local employment and sustain the positive social impact of the project.

## PROJECT FRAMEWORK

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Details and Issues
<b>Impact</b> <ul style="list-style-type: none"> <li>Access to markets</li> <li>Employment opportunities</li> <li>Social services</li> </ul>	<p>Household incomes in the project ZOI increased by 10% within 2 years of project completion.</p> <p>All provincial and district roads accessible 12 months a year, other than for exceptional events.</p> <p>Average surface roughness for provincial roads reduced to no more than an IRI of 6 and for district roads reduced to no more than an IRI of 8 by 2015.</p> <p>Scheduled public transport to operate on all provincial and district roads by 2015.</p>	<p>The difference in terms of percentage of household incomes in the category of income more than 3 million is 3.5 % in the ZOI of improved roads compared to unimproved roads. In the category of income within the range of D1 million–D3 million the difference is 4.9%. For incomes less than D1 million the increase of household incomes on improved roads compared to unimproved roads is 9.0%.</p> <p>All provincial roads improved under the project are accessible 12 months a year with an all-weather surface of DBST or asphalt concrete.</p> <p>Roads were examined in several provinces and it was determined that an average surface roughness of IRI 3–4 for provincial roads and an IRI of 4–5 for district roads as at 2013.</p> <p>Public transport through private operators is available on some provincial roads.</p>	<p>Appendix 9 on assessment of project impacts and benefits gives details on increases in income.</p> <p>Access to economic and social services were improved (Appendix 9).</p> <p>All provincial and district roads have surface roughness levels less than those envisaged at appraisal.</p> <p>Some provincial roads still do not have public transport available—either minibuses or larger buses. Traffic counts on several roads show no public transport (Appendix 10).</p>
<b>Outcome</b> <ul style="list-style-type: none"> <li>Induce more efficient and cost-effective movement of passengers and goods in the central region</li> </ul>	<p>For roads improved under the project, the average surface roughness for provincial roads reduced to no more than an IRI of 4 and for district roads reduced to no more than an IRI of 6 by project completion.</p> <p>Levels of motorized traffic on improved roads increased by an average of 40% from 2005 within 2 years of project completion.</p>	<p>For the roads examined in several provinces it was determined that an average surface roughness of IRI 3–4 for provincial roads and an IRI of 4–5 for district roads was achieved as at 2013.</p> <p>Level of traffic on improved roads has increased in excess of 40%.</p>	<p>All provincial and district roads have surface roughness levels lower than those envisaged at appraisal.</p> <p>Appendix 10 gives details of traffic counts on roads during 2006–2012. Traffic levels have increased far in excess of the 40% envisaged at appraisal.</p>

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Details and Issues
	<p>Value of goods carried on improved roads increased by an average of 25% from 2005 within 2 years of project completion.</p> <p>Passenger and freight transport rates on project roads reduced by an average of 10% in real terms from 2005 within 2 years of project completion.</p> <p>Scheduled passenger services introduced on project roads by project completion.</p> <p>Road closures eliminated on project roads, except in severe flood conditions.</p> <p>Annual financial allocation for routine and periodic maintenance of provincial roads increased by 100% from FY2004 levels by project completion</p>	<p>No data on value of goods carried but data available on increase in transport of produced commodities. Agricultural produce is the main commodity transported and transport has increased from 66.7% under the condition of unimproved roads to 78.3% in the post-improvement situation.</p> <p>VOCs reduced by an average of 17%.</p> <p>Scheduled projects services not introduced on all project roads.</p> <p>Road closures eliminated due to improvement of all-weather surface to DBST or asphalt concrete standards.</p> <p>Allocation has increased.</p>	<p>Appendix 9 on Assessment of Project Impacts and Benefits gives details.</p> <p>Appendix 9 on Assessment of Project Impacts and Benefits gives details on reductions in VOCs.</p> <p>Appendix 10 on Economic Reevaluation gives traffic data on project roads and it can be seen which roads now have public transport services either via minibuses or regular buses.</p> <p>A road fund has also been established (para 54) which also supplements financial budgetary allocations.</p>
<p><b>Component/Outputs</b></p> <p>1. Improvement of provincial and district roads and associated bridges and drainage completed</p>	<p>Preparation and implementation of resettlement plans and initial environmental examinations and environmental management plans approved by PPCs and ADB and implemented without delays in project schedule</p> <p>Improvement of 1,195 km of provincial and district roads to Class V and IV sealed standard, including repair or replacement of bridges and adequate drainage</p> <p>Completion of civil works contracts on schedule, in compliance with conditions of contract and all defects rectified by end of the</p>	<p>Resettlement plans and initial environmental examinations approved but with delays.</p> <p>Total of 729.73 km of provincial and district roads to Class IV and V improved to sealed standard including repair and replacement of bridges and drainage (about 61% of the appraisal figure of 1,200 km).</p> <p>All civil works not completed on time due to delays</p>	<p>Paragraph 23 refers to delays. Also see Appendix 11 on resettlement.</p> <p>The scope had to be reduced due to high inflation combined with a depreciation of the Vietnamese currency. It became evident that the allocated funding would not be sufficient and the appraisal target of 1,200 km had to be reduced (para 8).</p>

Design Summary	Appraisal Performance Indicators/Targets	Project Achievements	Details and Issues
<p>2. Operationalization of road maintenance budgeting and planning systems in all project provinces completed</p> <p>3. Road safety audits completed for all roads and of road safety programs established in pilot provinces</p> <p>4. HIV/AIDS and STI awareness and prevention programs completed on all project roads</p>	<p>defects liability period Introduction of a maintenance management system in target provinces, training of PDOT staff, and adoption into PPC and PDOT business practices by project completion</p> <p>Establishment of a road safety program in three pilot provinces by project completion</p> <p>All vulnerable groups and contractors' personnel have participated in HIV/AIDS and STI awareness and prevention programs within 3 months of commencement of civil works</p>	<p>The, RoSy Pavement Management System was introduced, but this was not used by all PDOTs and some PDOTs use the World Bank's Viet Nam Provincial Roads Maintenance Management System software.</p> <p>Completed</p> <p>Gender, HIV/AIDS, and Anti-Trafficking Program undertaken. Additionally an ethnic minority development program was undertaken.</p>	Paragraph 12
<p><b>Activities</b></p> <p>1.1 Civil works Preparation Consulting Services—complete project implementation documentation for phases 1 and 2. <b>Target:</b> Begin Q3 2005 and completed Q3 2006. <b>Actual:</b> Begin Q3 2005 and completed Q3 2007.</p> <p>2.1 Project Implementation Consulting Services—prepare Phase 3 roads and supervise construction of roads under phases 1, 2, and 3. Supervision of implementation of resettlement plans, ethnic minority development plans, environmental mitigation and monitoring, and HIV/AIDS awareness. <b>Target:</b> Begin Q3 2006 and complete Q2 2009. <b>Actual:</b> Begin Q4 2006 and complete Q3 2012.</p> <p>3.1 Institutional Development Consulting Services—training and equipment for institutional strengthening, and pilot road safety programs. <b>Target:</b> Begin Q1 2007 and complete Q2 2009. <b>Actual:</b> Begin Q3 2008 and complete Q2 2010.</p> <p>4.1 Civil Works <b>Targets:</b> Start of Phase 1 construction in Q3 2006. Start of Phase 2 construction in Q1 2007. Start of Phase 3 construction in Q3 2007. Completion of construction Q2 2010. <b>Actual:</b> Start of Phase 1 construction in Q4 2007. Start of Phase 2 construction in Q4 2007, Start of Phase 3 construction in Q3 2009. Completion of construction Q2 2012.</p>		<p><b>Inputs</b></p> <p><b>Civil Works</b> (including land acquisition and resettlement) estimated value approximately \$120 million (ADB and Government of Viet Nam (GOV))</p> <p><b>Consulting services</b> (including ethnic minority development and social action plans, institutional strengthening, training, road safety, and HIV/AIDS awareness) estimated values:</p> <p><b>Civil Works Preparation</b> \$2.0 million (ADB)</p> <p><b>Implementation Services</b> \$8.8 million (NDF)</p> <p><b>Institutional Development</b> \$1.7 million (NDF)</p> <p><b>Gender, HIV/AIDS</b> \$0.5 million (ADB)</p> <p><b>External Monitoring</b> \$0.1 million (GOV)</p> <p><b>UXO Clearance</b> \$1.4 million (GOV)</p> <p><b>Actual</b></p> <p><b>Civil Works</b> (including land acquisition and resettlement) \$118.98 (ADB and Government of Viet Nam (GOV))</p> <p><b>Consulting services:</b></p> <p><b>Civil Works Preparation</b> \$1.93 (ADB)</p> <p><b>Implementation Services</b> \$11.15 million (NDF)</p> <p><b>Institutional Development</b> \$1.62 million (NDF)</p> <p><b>Ethnic Minority Development Plan</b> \$0.45 (NDF)</p> <p><b>Gender, HIV/AIDS</b> \$0.43 million (ADB)</p> <p><b>External Monitoring</b> \$0.1 million (GOV)</p> <p><b>UXO Clearance</b> \$0.52 million (GOV)</p>	

ADB = Asian Development Bank, DBST = double bituminous surface treatment, FY = financial year, IRI = International Roughness Index, km = kilometer, NDF = Nordic Development Fund, PDOT = provincial department of transport, PPC = provincial people's committee, Q = quarter, STI = sexually transmitted infection, UXO = unexploded ordnance, VOC = vehicle operating cost, ZOI = zone of influence.

Source: Asian Development Bank.

**APPRAISAL AND ACTUAL PROJECT COSTS**  
(\$ million)

Component	Appraisal			Actual		
	Foreign	Local	Total	Foreign	Local	Total
A Civil Works <sup>a</sup>	69.10	26.40	<b>95.50</b>	66.71	39.99	<b>106.70</b>
B Support to PMU-1	0.30	0.10	<b>0.40</b>	0.25	0.08	<b>0.33</b>
C Land Acquisition and Resettlement Monitoring	0.00	4.90	<b>4.90</b>	0.00	12.28	<b>12.28</b>
D Unexploded Ordnance Clearance	0.00	1.40	<b>1.40</b>	0.00	0.52	<b>0.52</b>
E Consulting Services	10.10	2.50	<b>12.60</b>	12.49	3.08	<b>15.58</b>
Civil works preparation	1.60	0.30	<b>1.90</b>	1.62	0.30	<b>1.93</b>
Implementation services	6.40	1.60	<b>8.00</b>	8.92	2.23	<b>11.15</b>
Institutional development	1.30	0.40	<b>1.70</b>	1.24	0.38	<b>1.62</b>
Ethnic minority development plan	0.50	0.00	<b>0.50</b>	0.45	0.00	<b>0.45</b>
Gender, HIV/AIDS, and anti-trafficking program	0.30	0.20	<b>0.50</b>	0.26	0.17	<b>0.43</b>
F Environmental Mitigation <sup>b</sup>	2.40	1.40	<b>3.80</b>	0.00	0.00	<b>0.00</b>
G Project Management	0.00	0.50	<b>0.50</b>	0.00	2.02	<b>2.02</b>
H Taxes and Duties <sup>c</sup>	0.00	15.80	<b>15.80</b>	-	-	<b>-</b>
<b>Total Baseline Cost</b>	<b>81.90</b>	<b>53.00</b>	<b>134.90</b>	<b>79.44</b>	<b>57.98</b>	<b>137.43</b>
Interest Charges During Construction	3.10	0.00	<b>3.10</b>	1.61	0.00	<b>1.61</b>
<b>Total Project Cost</b>	<b>85.00</b>	<b>53.00</b>	<b>138.00</b>	<b>81.05</b>	<b>57.98</b>	<b>139.04</b>

Figures may not add due to rounding

<sup>a</sup> Includes price contingency and physical contingency based on unit cost estimates of sample roads at appraisal.

<sup>b</sup> Actual included in civil works costs

<sup>c</sup> Estimated as equivalent to 16% of civil works costs at appraisal. Actual costs have taxes and duties included in civil works costs. .

PMU-1 = Project Management Unit No. 1.

Source: Asian Development Bank estimates.

**CURRENCY EQUIVALENTS**  
(1 January–31 December)

<b>Year</b>	<b>D to \$1.00</b>
2005	15,895.0
2006	15,989.0
2007	15,738.3
2008	16,179.0
2009	17,490.0
2010	18,921.3
2011	20,453.6
2012	20,692.7
2013 <sup>a</sup>	21,048.5

D = dong.

<sup>a</sup> 2013 exchange rate is based on 1 January–28 July 2013.

Source: Asian Development Bank.

**SUMMARY OF CONTRACTS FUNDED BY THE ASIAN DEVELOPMENT BANK**

<b>PCSS No</b>	<b>Description</b>	<b>Contract/Supplier</b>	<b>Currency of Contract</b>	<b>Contract Amount</b>	<b>Disbursed Amount</b>
1	Consulting services	ND Lea Consultant	\$	1,877,071	1,877,071
2	TTH04/PR4 Thua Thien Hue	Phuong Thanh Transportation Construction and Investment	\$	1,018,621	1,018,621
3	TTH02/TL2 Thua Thien Hue	Joint venture between Phuoc An and Construction Commerce No. 68	\$	633,139	633,139
4	BT01 Binh Thuan Province	Rang Dong	\$	1,654,270	1,654,270
5	BT02 Binh Thuan Province	Rang Dong	\$	748,184	748,184
6	BT04 Binh Thuan Province	Rang Dong	\$	1,059,757	1,059,757
7	LD01 Lam Dong Province	Joint venture between Hoang An and Vinashin Infrastructure Development	\$	950,435	950,435
8	LD02 Lam Dong Province	Rural Development Construction and Investment	\$	676,985	676,985
9	LD03 Lam Dong Province	Joint venture between Rural Development and Construction Company No. 6 and Cao Bang	\$	1,545,071	1,545,071
10	TTH01/DR5	939 Construction	\$	673,096	673,096
11	QB01/PRDN-HH	Joint venture between Vinh Truong Construction and General Construction Company No. 269	\$	502,702	502,702
12	QB02/PR10	Association of Trade and Service Cons. No. 68	\$	840,452	840,452
13	QB03/PR10	Central Region General Construction and Invest	\$	840,858	840,858
14	QB04/PR10	Construction Company No. 699	\$	676,200	676,200
15	QB05/PR10	Truong Thinh Group	\$	915,726	915,726
16	NA08/PR598	Thanh Phat Construction	\$	721,300	721,300
17	NA07/PR598	Association of Tien Hoang General Construction	\$	564,523	564,523
18	DL04	Joint venture between Lam Phong and Company No. 71	\$	422,683	422,683
19	QT03/Dai Lo–Thuan Phuoc Road	Phuong Thanh Trans Construction and Investment	\$	603,927	603,927
20	QT01/QL1 Son Lam– Son Thuy	Central Region	\$	631,045	631,045
21	QT02/PR76 (East)	Joint venture between An Phu and Thanh An	\$	771,048	771,048

PCSS No	Description	Contract/Supplier	Currency of Contract	Contract Amount	Disbursed Amount
22	Various	939 Construction	\$	1,344,493	1,344,493
23	QT06/PR7	Quang Tri General Construction	\$	466,967	466,967
24	DN NO.1	Joint venture between Technical Materials, Construction and Installation and Manh Cuong	\$	733,181	733,181
25	DK NO.2/PR684	Joint venture between Phuong Nam and Ha Nam	\$	1,075,749	1,075,749
26	DL01/TL685	Joint venture between Nguyen Hung and Phu Xuan Construction	\$	452,294	452,294
27	DL03/TL685	Joint venture between Long Bien Construction and An Nguyen	\$	557,164	557,164
28	DL05/PR682	Hoang Nam Bridge and Road Construction	\$	605,080	605,080
29	NA01/TL533	Association of Thanh Phat Cons. and Trung Tin	\$	1,418,316	1,418,316
30	NA02/TL533	Association of Truong Son Construction and Investment	\$	1,559,342	1,559,342
31	NA03/TL533	Phu Nguyen Hai	\$	912,990	912,990
32	TTH03/TL4	Joint venture between Thanh Phat, 1 <sup>st</sup> May and Nam Hieu	\$	917,769	917,769
33	LD04/TL725	Joint venture between Technical Material, Construction and Installation	\$	1,002,910	1,002,910
34	DKN03/PR684	Joint venture between Dong Bac and Cuong Thuan	\$	778,497	778,497
35	DKN06/PR684	Phu Vinh Construction	\$	781,439	781,439
36	DKN07/PR684	Phu Vinh Construction	\$	731,396	731,396
37	DL02/PR685	Joint venture between Hoang An and Hatay Transportation	\$	548,912	548,912
38	DKN04/PR684	Song Da Any Company No.5	\$	906,087	906,087
39	HT01/PR12	Tan An Construction	\$	916,153	916,153
40	HT02/PR12	Construction Company No. 12	\$	932,252	932,252
41	HT03/PR7	Central Region Trade Construction Investment	\$	929,795	929,795
42	HT05/DR2	Engineering Construction Company No. 412	\$	777,542	777,542
43	HT06/DR1	Hoa Hiep	\$	417,862	417,862
44	QT05/PR7	Joint Venture Between Thanh An and Quang Tri General Construction	\$	493,765	493,765
45	Various	Joint venture between A&C and Uhy Audit and Advisory Services	\$	104,530	104,530
46	DKN05/PR684	Rural Development Construction and Investment	\$	979,926	979,926
47	QNG01/Son Ha-Ba	Joint venture between Truong Thanh Synthesis and An Phu	\$	734,820	734,820

PCSS No	Description	Contract/Supplier	Currency of Contract	Contract Amount	Disbursed Amount
48	Tieu QNG02/Son Ha–Ba	Construction			
49	Tieu QNG04/Son Ha–Ba	Manh Hung and Thanh Dat Construction	\$	1,592,496	1,592,496
50	Tieu QNG05/Chau O–Sa	Quang Ngai 19/8 and Thanh Dinh	\$	1,472,330	1,472,330
51	Ky QNG06/Highway 1a– Binh Minh	Giao Thuy Joint venture between Tin Nghia Trade Construction and 20 <sup>th</sup> July	\$	704,147	704,147
52	Various	Joint venture between Tay Ninh Transport Construction and Hung Lien	\$	498,048	498,048
53	QNA02/PR611	Quang Nam Transport and Communication	\$	621,492	621,492
54	QNA04/PR611	Quang Nam Transportation Construction	\$	631,774	631,774
55	QNA05/PR611	Quang Nam Transportation Construction	\$	860,716	860,716
56	BD01/ND-AL	Joint venture between Dinh Phat and Nguyen Hung Construction	\$	506,007	506,007
57	BD02/DT-TT	An Binh General Construction	\$	655,738	655,738
58	BD03/DT-TT	Thuan Duc Construction	\$	631,036	631,036
59	BD05/CC-LV	Kim Thanh General Construction	\$	690,324	690,324
60	BD06/CC-LV	Joint venture between Minh Phuong General Construction and Binh Dinh	\$	412,700	412,700
61	GL02/PR670	Joint venture between Dat Phuong and Gia Lai Transport Service	\$	365,047	365,047
62	GL03/PR670	Joint venture between Phuong Nam and Truong Long	\$	1,297,072	1,297,072
63	GL04/PR670	Joint venture between Hoang Nhi and Dong Hung Gia Lai	\$	855,952	855,952
64	GL05/PR670	Tay Ninh Construction Investing	\$	777,554	777,554
65	GL06/PT-DB	Joint venture between Trung Kien and Gia Lai Transport Construction	\$	891,260	891,260
66	Various	Investment and Construction Company No. 4	\$	952,302	952,302
67	NT03/PR708	Construction Engineering, Equipment and Materials	\$	487,879	487,879
68	TH01/DT518-1/1	Minh Tuan Construction and Investment	\$	977,879	977,879
69	TH02/DT508-1/2	Thanh Hoa Engineering	\$	499,397	499,397
			\$	516,705	516,705

PCSS No	Description	Contract/Supplier	Currency of Contract	Contract Amount	Disbursed Amount
70	TH03/DT508-2/2	559 General Services Construction	\$	1,070,741	1,070,741
71	TH04/DT506-1/3	Joint venture between Thanh Hoa Transport No. 1 and Hop Luc	\$	844,981	844,981
72	TH05/DT506-2/3	Hoang Long Investment and Construction	\$	734,028	734,028
73	TH06/DT506-3/3	Joint venture between Son Trang and Bridge Construction	\$	1,283,540	1,283,540
74	TH07/DT514-1/3	Thanh Hoa Transport Company No. 2	\$	511,286	511,286
75	KH01/PR2	Joint venture between No. 71 Company and Lam Phong	\$	2,537,051	2,537,051
76	KH02/PR9	An Phong Engineering and Construction	\$	665,744	665,744
77	DN01/Hoa Phu–Hoa Ninh	Quang Nam Transport Construction	\$	578,331	578,331
78	DN02/Hoa Phong– Hoa Phu 01	Association of Thanh Vang and Construction No. 789	\$	892,427	892,427
79	DN03/Hoa Phong– Hoa Phu 02	68 Trading Construction and Service	\$	646,424	646,424
80	DN04/Bac Thuy Tu– Pho Nam 01	Rural Development Construction and Investment	\$	720,114	720,114
81	DN05/ Bac Thuy Tu– Pho Nam 02	Ha Noi Water Project Construction	\$	1,458,946	1,458,946
82	KT01/PR671	Joint venture between Truong Long and An Cuong Construction Work	\$	753,942	753,942
83	KT02/PR671	Joint venture between Tien Dung Investment and Trade and Truong Nam	\$	672,099	672,099
84	KT03/PR671	Joint venture between Thanh Tung and Tuan Dung	\$	888,183	888,183
85	KT04/PR671	Rural Construction Investment	\$	1,000,536	1,000,536
86	KT05/PR678	Joint venture between Tan Hung and Dong Hung Gia Lai	\$	1,679,855	1,679,855
87	TH08/DT514-2/3	Joint venture between Tan Thanh and Manh Cuong Co. Ltd.	\$	1,230,833	1,230,833
88	PY01/CK-AN	Joint venture between An Binh and Hong Phuc	\$	1,017,453	1,017,453
89	PY04/PR646	Joint venture between Hoa Hiep and Overseas Labor Employment	\$	920,066	920,066
90	GL01/PR670	Kon Tum Transport and Construction	\$	749,237	749,237
91	QNA03/PR611	Joint venture between Quang Nam Transportation Engineering and Quang Nam Communication Transport	\$	684,403	684,403
92	QNG03/Son Ha–Ba	Trang Linh	\$	755,901	755,901

PCSS No	Description	Contract/Supplier	Currency of Contract	Contract Amount	Disbursed Amount
	Tieu				
93	DL07/PR690	Joint venture between Long Bien Construction and Hoang Nam	\$	671,539	671,539
94	DL08/PR690	Joint venture between Dak Lak Construction and Material and An Nguyen	\$	1,132,275	1,132,275
95	DL09/PR690	Joint venture between Lam Phong, Tien Quang, and Phu Thinh	\$	822,804	822,804
96	HT08/CC	General Construction Company No. 269	\$	875,383	875,383
97	HT07/CC	Joint venture between Construction Company No. 559 and Central Region General Construction and Investment	\$	952,742	952,742
98	BD04/DT-TT	Joint venture between Minh Thao and Nam Ngan Private Enterprise	\$	620,200	620,200
99	PY02/PR646	Joint venture between Phu Yen Transport Construction and HN Transport	\$	672,889	672,889
100	PY03/PR646	Joint venture between Khanh Hoa Road Construction and Management, Khanh Hoa Transport Management and Construction, and Ba Ria Vung Tau Transportation Construction	\$	943,657	943,657
101	KH03/PR9	Song Da Company No.19	\$	503,257	503,257
102	Various	Truong Tho Construction	\$	1,275,661	1,275,661
103	Various	Joint venture between Hoang Nhan Invest and Construction and Tan Phat	\$	1,678,580	1,678,580
104	Various	Joint venture between Hason and Engineering Construction Equipment	\$	436,012	436,012
105	Various	Joint venture between Dai Minh Construction and Consultancy	\$	12,255	12,255
106	Various	Pacific Consultant	\$	3,781	3,781
107	Various	Hung Cuong	\$	151,390	151,390
108	Various	Truong Thinh Group	\$	965,616	965,616
109	Various	Truong Thinh Group	\$	771,276	771,276
110	Various	Truong Thinh Group	\$	1,151,873	1,151,873
111	Various	Joint venture Viet Intelligence Software Solution	\$	160,163	160,163
112	Various	Joint venture between Construction and General Service Company No. 559 and Central Region General Construction and Investment.	\$	843,318	843,318

PCSS No. = procurement contract summary sheet number  
Source: Asian Development Bank Loans Financial Information System

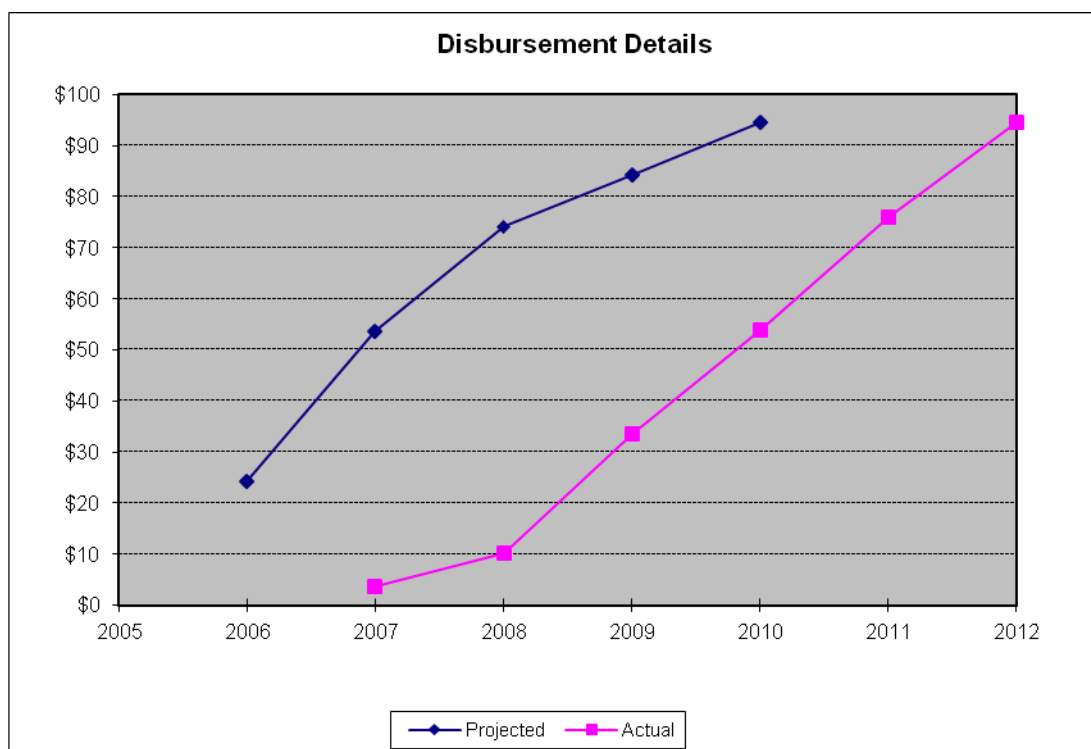
**PROJECTED AND ACTUAL DISBURSEMENTS (CUMULATIVE)**

(\$ million)  
(Loan 2195)

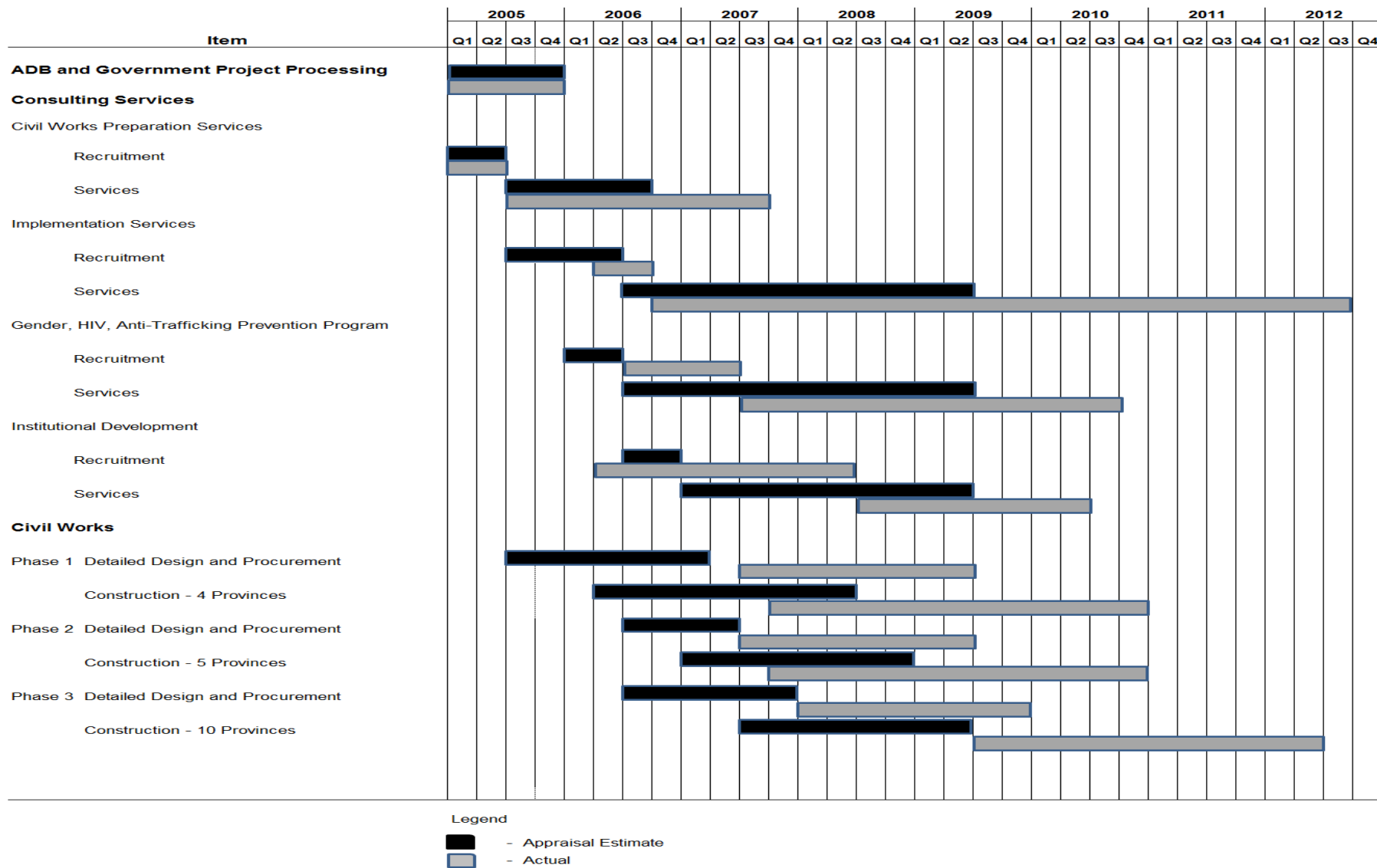
Year	Projected	Actual
2006	24.32	
2007	53.73	3.75
2008	74.11	10.08
2009	84.31	33.54
2010	94.50	53.89
2011		76.02
2012		94.58
2013		94.85

Note: The difference between the projected total (i.e., appraisal) and the actual total is because of exchange rate differences between special drawing rights and the dollar.

Source: Asian Development Bank Loan Financial Information System.



## PROJECT IMPLEMENTATION SCHEDULE



Source: Asian Development Bank.

**CHRONOLOGY OF MAJOR EVENTS**  
**Loan No. 2195-VIE and Grant 0022-VIE**

Date	Event
<b>2004</b>	
16 Aug–3 Sept	Fact-finding mission
<b>2005</b>	
21 Mar–1 Apr	Appraisal mission
21 Mar–1 Apr	Loan appraisal
9 Jun	Nordic Development Fund approval of credit no. 422
19 Sep	Contract signed by civil works preparation consultant
10–11 Oct	Loan negotiations
11 Nov	Loan approval
30 Nov	Loan signing
30 Dec	Nordic Development Fund loan signing
<b>2006</b>	
28 Feb	Loan effectiveness
7–9 Jun	Inception mission
13–17 Nov	Review mission
17 Nov	Contract signed by implementation consultant
1 Dec	Da Nang regional office operational
<b>2007</b>	
7–9 May	Review mission
7 Aug	Contract signed by gender, HIV/AIDS, and anti-trafficking consultant
10 Oct	Vinh regional office operational
3–7 Dec	Review mission
<b>2008</b>	
7–15 Apr	Review mission
8 Apr	Contract signed by institutional development consultant
15 Jul	Dak Lak regional office operational
11–16 Aug	Review mission
24 Nov–4 Dec	Midterm review mission
<b>2009</b>	
30 Jan	Minor change in financing arrangements
16 Mar	All technical detailed designs and cost estimates in phase 3 approved by provincial departments of transport
9–23 Jul	Review mission
28 Sep–3 Oct	Special review mission
<b>2010</b>	
21–31 Jan	Review mission
16 Apr	Extension of loan and grant closing date to 30 June 2012
16–28 Apr	Review mission
21–24 Jun	Special review mission

Date	Event
<b>2011</b>	
23 Feb–4 Mar	Review mission
16 Feb	Addendum signed for benefit monitoring and evaluation consultant and Ethnic Minority Development Program consultant
16–26 May	Review mission
4 Oct	Grant financially closed and undisbursed amount cancelled
10–22 Oct	Review mission
28 Nov–2 Dec	Safeguards review mission
15–21 Dec	Special review mission
<b>2012</b>	
14 Feb	Borrower requests extension to Nordic Development Fund loan to 31 January 2013
8–2 Mar	Review mission
23 Mar	Nordic Development Fund agreed on loan extension to 31 January 2013
16–31 Dec	Review mission
<b>2013</b>	
22 Feb	Nordic Development Fund loan financially closed and undisbursed amount cancelled
10 Jun	Loan financially closed and undisbursed amount cancelled
18–27 Jul	Project completion review mission

Source: Asian Development Bank.

**STATUS OF COMPLIANCE WITH MAJOR LOAN AND GRANT COVENANTS**  
(Loan 2195-VIE AND Grant 0022-VIE)

<b>Covenant</b>	<b>Reference in the Loan Agreement or Grant Agreement</b>	<b>Status of Compliance</b>
<b>Particular Covenants</b>		
The Borrower shall make arrangements satisfactory to the Bank for insurance of the Project facilities to such extent and against such risks and in such amounts as shall be consistent with sound practice.	LA Section 4.05 (a)	Complied with.
Viet Nam shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience, and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Loan proceeds and compliance with the financial covenants of this Loan Agreement as well as on the use of the procedures for imprest account/statement of expenditures), all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	LA Section 4.02 (a)	Complied with.
Viet Nam shall enable ADB, upon ADB's request, to discuss Viet Nam's financial statements for the Project and its financial affairs related to the Project from time to time with Viet Nam's auditors, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of Viet Nam unless Viet Nam shall otherwise agree.	LA Section 4.02 (b)	Complied with.
Viet Nam shall enable ADB's representatives to inspect the Project, the goods financed out of the proceeds of the Loan, and any relevant records and documents.	LA Section 4.03	Complied with.
<b>Project Implementation and Coordination</b>		
The MOT shall be the Project Executing Agency with responsibility and coordination delegated to PMU-1. PMU-1 shall be responsible for awarding all consulting services and civil works contracts. If a PDOT is selected to open an Second Generation Imprest account pursuant to paragraph 5(a) of Schedule 3 to this Loan Agreement, then the PDOT in that Participating Province shall also be authorized to award civil works contracts.	LA Schedule 6, para. 1	Complied with.



<b>Covenant</b>	<b>Reference in the Loan Agreement or Grant Agreement</b>	<b>Status of Compliance</b>
(iii) PDOTs and the MOT incorporate road safety audit recommendations developed under the Project into the road network improvements resulting from the Project; and (iv) by the end of the Project PDOTs shall have adopted an open competitive bidding process for at least 50% of the periodic road maintenance program in the Participating Provinces.		
<b>Resettlement</b> The MOT shall be responsible for the timely acquisition of the land required for each subproject and for compensation and, if required, relocation, resettlement, and rehabilitation of people affected by any subproject of the Project. MOT shall be responsible for preparing a new resettlement plan for any subproject requiring one under the Resettlement Framework (i.e., for subprojects not yet having an approved resettlement plan and which will cause resettlement impacts) and shall submit such resettlement plan to ADB for approval prior to implementation. Each resettlement plan shall be prepared after completion of a detailed design, and such design shall be completed prior to commencing resettlement activities. Each resettlement plan shall be prepared in compliance with ADB's Policy on Involuntary Resettlement. In preparing a resettlement plan for subprojects not yet having an approved resettlement plan, the MOT shall specifically assess the subproject's impact on any minority groups or ethnic minorities likely to be affected.	LA Schedule 6, para. 9	Complied with late.
For each Participating Province the relevant provincial People's Committee shall be responsible for implementing subproject land acquisition and resettlement plans through the resettlement committees in the relevant province and district and which committees shall be closely involved in resettlement implementation. With the assistance of an international resettlement specialist, the MOT and its local consultants shall conduct training in compensation standards, procedures, entitlements, implementation, grievance processes, and monitoring procedures for the provincial and district resettlement committees.	LA Schedule 6, para. 10	Complied with late.
The MOT shall ensure that such land acquisition, compensation, relocation, and resettlement is carried out in accordance with the approved resettlement plans and Resettlement Framework agreed upon between Viet Nam and ADB, Viet Nam's laws, regulations, procedures and ADB's requirements as defined in ADB's Policy on Involuntary Resettlement. In case of discrepancies between Viet Nam's laws, regulations, and procedures and ADB's requirements, ADB's requirements shall apply. Each PPMU shall provide PMU-1 with monthly reports on land acquisition and resettlement. The MOT shall provide ADB with quarterly status reports on the land acquisition and resettlement process as part of the progress reports required under Section 6.05 of the Loan Regulations, and shall provide a report immediately following completion of a resettlement plan's implementation.	LA Schedule 6, para. 11	Complied with late.

<b>Covenant</b>	<b>Reference in the Loan Agreement or Grant Agreement</b>	<b>Status of Compliance</b>
The MOT shall ensure that, prior to the award of any civil works contracts for any road segment to be financed from the Loan proceeds: (i) a detailed measurement survey for each such segment and validated compensation unit rates for all categories of losses and allowances has been completed; (ii) ADB has been provided a final database of affected persons, a summary of the updated detailed measurement survey data, and replacement cost tables for each subproject; and (iii) an updated resettlement plan, incorporating subparagraphs (i) and (ii) herein, has been submitted to and approved by ADB.	LA Schedule 6, para. 13	Complied with.
The MOT shall ensure that civil works contractors are not issued a notice of possession of site for construction works with respect to any specific section of a road unless, for that section, the MOT has (i) satisfactorily completed, in accordance with the approved resettlement plan, compensation payment and relocation to new sites; and (ii) ensured that required rehabilitation assistance is in place and the area required for civil works is free of all encumbrances.	LA Schedule 6, para. 14	Complied with.
<b>Social Safeguards</b> If, when preparing a resettlement plan, pursuant to para. 9 of this Schedule, for subprojects not yet having an approved resettlement plan, the MOT determines that a subproject will affect any minority group or ethnic minority, then the MOT shall ensure that (i) Ethnic Minority Specific Actions are prepared if the negative impacts on ethnic minorities are found to be limited, or (ii) Ethnic Minority Development Plans are prepared and implemented if the impacts on ethnic minorities are significant. Preparation of Ethnic Minority Specific Actions and Ethnic Minority Development Plans shall be in accordance with the approved and agreed upon Ethnic Minority Development Framework, ADB's Policy on Indigenous Peoples, and in coordination with the Government's ethnic minorities programs and shall be subject to ADB's approval.	LA Schedule 6, para. 15	Complied with late. Draft EMDPs and EMSAs had been prepared in November 2005 but by April 2010 there was still no progress. Work commenced in late 2011.
The MOT shall ensure that civil works contractors do not differentiate in wages between male and female workers and that no child labor is employed in the Project's construction activities and camps. The MOT shall further ensure that the civil works contracts include mandatory provisions on health, sanitation, and appropriate working conditions, including health, safety, and accommodation, for construction workers at campsites during the construction period. In addition, the MOT shall ensure that contractors are contractually required to allow the gender, HIV/AIDS, and Anti-Trafficking Program consultants (as described in paragraph 3(d) of Schedule 5 to this Loan Agreement) to conduct information and education campaigns on health and safety and sexually transmitted infections/HIV/AIDS programs targeted at construction workers (as also described in para. 1, Part C, of Schedule 1 to this Loan Agreement).	LA Schedule 6, para. 16	Complied with.

Covenant	Reference in the Loan Agreement or Grant Agreement	Status of Compliance
<p><b>Environmental Management</b></p> <p>Viet Nam shall ensure that the Government's laws and regulations governing environmental impact assessments, as well as ADB's Environment Policy (2002) are followed. If there is any discrepancy between the Government's laws and regulations and ADB's Environment Policy, then the ADB Policy requirements shall apply.</p> <p>For each subproject for which an IEE has not been prepared, the relevant PDOT shall prepare an IEE, which includes an EMP specific to that subproject. Prior to civil works contracts being awarded for the subproject, the MOT shall ensure that IEEs (a) are based on the Project IEE prepared during Project preparation and follow the Environmental Assessment and Review Procedures set forth in the IEE, and (b) include details of local consultation carried out before and during IEE preparation. For subprojects confirmed by ADB as environmentally sensitive, the subproject proposal and the IEE shall be forwarded to ADB for review (as well as an environmental impact assessment if it is determined that there will be a significant environmental impact) and the summary environmental impact assessment shall be made available to the general public at least 120 days before each subproject is approved.</p> <p>The MOT shall (a) prepare a Project Environmental Management Plan to monitor the contractors' implementation of the EMPs; (b) ensure that specific provisions are included for the preparation, implementation, and monitoring of EMPs in civil works and consulting services contracts; (c) ensure that the environmental mitigation measures in the IEE are adequately implemented by the contractors; and (d) provide adequate budgetary allocation for this activity.</p>	<p>LA Schedule 6, para. 17</p> <p>LA Schedule 6, para. 18</p> <p>LA Schedule 6, para. 19</p>	<p>Complied with.</p> <p>Complied with. 19 IEEs were prepared (one IEE for all subprojects in each province) for the 19 participating provinces.</p> <p>Complied with.</p>
<p>Viet Nam and the MOT shall ensure that the contract documents for all civil works under the Project include specific measures as indicated in the summary environmental impact assessment and IEE and 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 Project facilities. If there are any changes in the specific locations or alignments or infrastructure or Project facilities after the IEE is completed, and which change may have an adverse environmental impact as agreed between Viet Nam and ADB, for either already approved subprojects or for proposed subprojects, an additional environmental assessment shall be completed and a process similar to that used for an IEE, and acceptable to ADB, shall be undertaken.</p>	<p>LA Schedule 6, para. 20</p>	<p>Complied with.</p>

<b>Covenant</b>	<b>Reference in the Loan Agreement or Grant Agreement</b>	<b>Status of Compliance</b>
Each PDOT, through the relevant PPMU, shall assign an adequate number of environment and social specialists to be responsible, in conjunction with the consultants described in paragraph 1(b) of Schedule 5 to this Loan Agreement, for preparing IEEs and EMPs for the subprojects and submitting them to ADB, and implementing the EMPs. Viet Nam shall design and conduct appropriate training programs for environment and social specialist staff on topics related to their areas of responsibility.	LA Schedule 6, para. 21	Complied with.
<p>When roads rehabilitated under this Project are within three (3) kilometers of protected or environmentally sensitive areas, including nature reserves, national parks, conservation areas, biodiversity reserves, and cultural and historic sites, Viet Nam shall ensure that a monitoring program is in place and the MOT shall monitor performance of the civil works contractor. In the event problems are identified, then the applicable PDOT shall work with the appropriate Department of Environment and Natural Resources office to cooperatively prepare and implement environmental protective measures including, but not limited to, any combination of area demarcation, fencing, checkpoints, speed bumps, wildlife passage zones, patrols, or other measures to preserve the integrity of the area from encroachment or environmental degradation due to road improvement and increased access.</p> <p>Viet Nam shall ensure that civil works contracts include a provision requiring implementation of identified environmental protective measures.</p>	LA Schedule 6, para. 22	<p>Not applicable given that environmentally sensitive subprojects were screened out using subproject selection criteria.</p> <p>Complied with.</p>
Viet Nam shall cause (i) the contractors engaged under the civil works contracts to comply strictly with all environmental impact mitigation requirements set out in the contract documents, (ii) the consultants engaged for construction supervision to monitor closely the compliance by the contractors with the environmental impact mitigation requirements and (iii) the MOT shall submit to ADB semiannual reports on implementation of the Environmental Management Plan as stated in the IEE.	LA Schedule 6, para. 23	<p>Complied with late.</p> <p>Semiannual reports have been submitted late to ADB.</p>
Viet Nam shall ensure that the MOT conducts an unexploded ordnance survey and clearance, and completion of such clearance is certified to ADB by Viet Nam, prior to commencement of civil works.	LA Schedule 6, para. 24	Complied with.
<p><b>Auditing and Accounting</b></p> <p>Without prejudice to the generality of Section 4.02 of this Loan Agreement, Viet Nam shall ensure that a separate accounting system for Project expenditures is maintained in accordance with sound accounting principles. All Project accounts, including financial statements, statements of expenditures and account records, shall be audited annually</p>	LA Schedule 6, para. 25	Complied with.

Covenant	Reference in the Loan Agreement or Grant Agreement	Status of Compliance
<p>as part of the regular audit of accounts and financial statements by an independent auditing firm. The consolidated audit reports (in English) shall be submitted to ADB in accordance with the requirements and within the deadlines stated in Section 4.02(a) of this Loan Agreement. The audit opinion shall include (i) a detailed description of the source of funds and expenditures made; (ii) an assessment of the adequacy of accounting and internal controls systems with respect to Project expenditures and other financial transactions, and to ensure safe custody of Project-financed assets; (iii) a determination as to whether Viet Nam, executing agency and implementing agencies have maintained adequate documentation for all financial transactions, specifically including the Statement of Expenses and imprest account procedures; and (iv) confirmation of compliance with this Loan Agreement's financial covenants.</p>		
<p><b>Project Performance Monitoring and Evaluation</b></p> <p>The MOT shall establish a systematic Project performance monitoring and analysis system for use throughout the Project period. A Road Management Information System shall be established at each PDOT in a Participating Province to collect the required data.</p> <p>The MOT shall establish Project indicators (baseline data) in the Participating Provinces for each road assisted by the Project, including: (i) traffic volumes and journey times; (ii) goods moved, by value and category, and number of passengers; (iii) average road roughness; (iv) annual expenditures on maintenance in the provincial level national road network; and (v) social and economic impact indicators. For roads assisted by the Project in phase 1 and phase 2, the data shall be collected within one year of the Effective Date; for roads assisted by the Project in phase 3, the data shall be collected within one year of ADB approval of the subproject appraisal report. A second survey shall be conducted upon Project completion and a third survey two years after Project completion to establish Project impact. The design of the baseline and impact surveys shall include appropriate control areas and an assessment of all Project interventions, including resettlement and other safeguard interventions that affect the livelihood of project beneficiaries.</p> <p>The PMU-1 shall (i) collect and consolidate all Project progress reports, site reports, technical and financial reports and submit them to ADB; and (ii) prepare monthly and quarterly progress reports, a midterm Project evaluation report, and an overall Project completion report. Quarterly reports shall include updated implementation, financial, and procurement-related information, as well as reports submitted by the external monitor for resettlement</p>	<p>LA Schedule 6, para. 26</p> <p>LA Schedule 6, para. 27</p> <p>LA Schedule 6, para. 28</p>	<p>Complied with.</p> <p>Complied with late.</p> <p>Complied with.</p>

Covenant	Reference in the Loan Agreement or Grant Agreement	Status of Compliance
activities. Monthly and quarterly reports shall be submitted to ADB within 15 days of the end of each month or quarter, as applicable.		
The, PPMUs shall (i) prepare Project progress, technical, and financial reports covering site-specific activities; and (ii) collect and consolidate field data and feedback from local participating agencies and contractors. The PPMUs shall submit monthly and quarterly reports and data to the PMU-1 within one (1) week of the end of each month or quarter, as applicable.	LA Schedule 6, para. 29	Complied with.
In the carrying out of the Project, Viet Nam shall perform, or cause to be performed, all obligations set forth in Schedule 6 to the Loan Agreement.	GA Section 4.01	Complied with.
(a) Viet Nam shall (i) maintain, or cause to be maintained, separate accounts for the Project; (ii) have such accounts and related financial statements audited annually, in accordance with appropriate auditing standards consistently applied, by independent auditors whose qualifications, experience, and terms of reference are acceptable to ADB; (iii) furnish to ADB, as soon as available but in any event not later than 6 months after the end of each related fiscal year, certified copies of such audited accounts and financial statements and the report of the auditors relating thereto (including the auditors' opinion on the use of the Grant proceeds and compliance with the financial covenants of this Grant Agreement as well as on the use of the procedures for imprest account/statement of expenditures), all in the English language; and (iv) furnish to ADB such other information concerning such accounts and financial statements and the audit thereof as ADB shall from time to time reasonably request.	GA Section 4.02 (a)	Complied with.
(b) Viet Nam shall enable ADB, upon ADB's request, to discuss Viet Nam's financial statements for the Project and its financial affairs related to the Project from time to time with the auditors appointed by Viet Nam pursuant to Section 4.02(a) hereinabove, and shall authorize and require any representative of such auditors to participate in any such discussions requested by ADB, provided that any such discussion shall be conducted only in the presence of an authorized officer of Viet Nam unless Viet Nam shall otherwise agree.  Viet Nam shall enable ADB's representatives to inspect the Project, the goods financed out of the proceeds of the Grant, and any relevant records and documents.	GA Section 4.02 (a)  GA Section 4.03	Complied with.  Complied with.

ADB = Asian Development Bank, EMDP = ethnic minority development plan, EMP = environmental management plan, GA = grant agreement, IEE = initial environmental examination, LA = loan agreement, MOT = Ministry of Transport, PDOT = provincial department of transport, PMU = project management unit, PPMU = provincial project management unit VPROMMS = Viet Nam Provincial Roads Maintenance Management System .

Source: Asian Development Bank.

## **ASSESSMENT OF PROJECT IMPACTS AND BENEFITS**

1. The analysis of the impacts and benefits of the project is based on a review of documents and field visits to various subproject sites. The documents reviewed include the project completion report of the executing agency and the benefit monitoring evaluation (BME) exercise that was conducted during project implementation by the supervision consultants. Discussions were also held with officials of each of the provincial departments of transport and the provincial project management units visited. Field visits to appraise selected subprojects were undertaken and seven provinces were visited. The overall assessment was limited to the post-project physical conditions and performance of the interventions at the time of the field visits. The assessment, nevertheless, provides reasonable feedback on the project impacts and benefits, and the effectiveness of the project components in general.

2. The objectives of the project were to (i) reduce transport costs and induce more efficient movement of passengers and goods, (ii) provide all-weather road connectivity between rural areas and district and provincial centers, (iii) improve road safety, and (iv) establish sustainable road and bridge asset management systems for provincial road networks. The objectives have been substantially achieved.

3. The road network improvement comprised upgrading of about 1,200 kilometers (km) of roads to Viet Nam single-lane (Class V) or two-lane (Class IV) standard in 19 provinces in the central region to an all-weather sealed surface. The civil works also included repair or replacement of bridges and culverts, either as part of improvements or as separate subprojects. The actual output was 729.73 km of roads, including bridges and drainage structures. The supervision consultants undertook a BME exercise throughout the implementation of the roads under this component. A baseline survey was made at the commencement of the project from data collected on demographic characteristics, household incomes and expenditures, consumption and commodity prices, agriculture, access to health and education facilities, access for vulnerable social groups, travel times to facilities, and road user costs. Data were also collected during the BME exercise throughout implementation and on completion of the project roads. Inhabitants of the project area benefited considerably from the rehabilitation of the roads. The quantitative and qualitative data in the BME report indicate that all of the subprojects implemented under this component have experienced significant socioeconomic improvement. A summary of the main benefits realized is as follows:

- The assessment found that the project objectives have been achieved. The impacts are discernible in the areas of access to markets, employment opportunities, and social services by removing constraints on economic and social development in rural areas of the central region of Viet Nam.
- Vehicle operating costs have been reduced by the road improvements. Average savings in operating cost per kilometer were found to be more than 17% from the unimproved road situation to the improved road situation .
- A poverty impact analysis found that the primary mechanism through which benefits have accrued to the poor is vehicle operating cost savings, which are passed on to them through lower freight rates, lower passenger fares, and time savings. However, ethnic minorities have benefited less than other project beneficiaries because they make less use of passenger transport. Furthermore, many ethnic minority households do not produce enough agriculture products to be able to sell them in large quantities, and those that do usually sell their produce locally. However, ethnic minority households in

remoter areas benefited from an increase in the availability of goods and a decrease in prices because of the lower transport costs.

- Passenger surveys on both improved and unimproved roads showed that more than 70% of people using improved roads spent less than 1 hour travelling to a destination. On unimproved roads, however, only 30% of users spent less than 1 hour travelling to the same destination. This indicates that 40% more people benefited from savings in travel time on the improved roads. Only about 7% of people on the upgraded roads spent between 2–3 hours travelling to a destination. On an unimproved road, the corresponding figure was about 45%.
- Nearly all the passengers on the improved roads confirmed that the roads remained passable throughout the year. In contrast, unimproved roads were reported as impassable for 60–120 days per year. The upgrading of roads to all-weather standard has brought benefits to local people especially in the transportation of freight, which has increased the income of people in the project road areas. The following benefits were indicated during the Household Survey:
  - (i) easier driving conditions, greater convenience for carrying products to market for sale at higher prices, and reduced amounts of perishable goods;
  - (ii) reduced travel times, easier commutes to and from work, and more chances to generate income;
  - (iii) lower transport costs and savings on monthly expenditures;
  - (iv) better access to services such as education and health care; and
  - (v) improved chances of getting a new job (reported by nearly 40% of households interviewed).
- The impacts on ethnic minorities in phases 1 and 2 were limited. Many of the roads were in poor condition and passed through sparsely populated rural areas. They had been in existence for some time, providing access for the ethnic minority communities, although some roads were closed for periods of days during the rainy season. Most ethnic minorities along the upgraded project roads appreciated the improvement.
- The road improvement also had an impact on education, especially at the secondary level. In the areas with improved roads, 47.9% of people have secondary education. When secondary and high school levels are taken together, more than 75% of people are educated beyond primary level in the area with improved roads. The corresponding percentage in the area with unimproved roads is nearly 55%—a difference of more than 20 percentage points. In the areas without road improvement, 45.5% of people have attained primary education and the remaining 55.5% are educated beyond primary level. But in the area with improved roads, 82% people are educated beyond primary level and only 18% are educated to primary level. This indicates that the level of education attained is higher where the roads have been improved.
- The impact of road improvement on incomes has been far-reaching. About 95% of households living in the area of influence of the improved roads earn more than D1 million. The corresponding figure for households in unimproved project road areas is 86%—a difference of 9 percentage points. Households with incomes of more than D3

million make up 62.6% of the total number in improved road areas, compared with 59.1% in unimproved areas—a difference of 3.5 percentage points. The income difference in households in the D1 million–D3 million income category is 4.9 percentage points. Among those earning less than D1 million, the difference is 8 percentage points. This clearly shows that differences in income between the improved and unimproved road areas are more pronounced at lower income levels. This may be because there are fewer income opportunities in the zone of influence of unimproved roads than in the zone of influence of improved roads.

- Vehicle ownership has increased rapidly with greater accessibility and the improvement in road conditions. The increase in economic activity is the main reason for growing motorization and vehicle ownership. Survey data indicated that 93.4% of households had at least one motorcycle.
- The number of households engaged in agricultural production increased after the road improvements. In unimproved roads areas about 66.7% of households were engaged in agriculture. In areas where road improvements have taken place the percentage has increased to 78.3%. The increased accessibility to markets may account for this change.

4. The inspected roads were generally found to be in good condition. The international roughness index (IRI) of most road sections was in the 2.5–3.5 IRI range, compared to 8.0–12.0 IRI before road improvement.<sup>1</sup> It was noted, however, that maintenance was needed on some sections of the project roads (e.g., for potholes, cracks, and damaged shoulders). These defects were not due to poor-quality construction but the lack of a regular preventive maintenance regime. It was also noted that routine maintenance, such as cleaning culverts, was not being undertaken. Immediate attention is needed to prevent these problems from becoming worse. The provincial departments of transport are strongly recommended to undertake maintenance on the roads so that project benefits can be sustained.

---

<sup>1</sup> The IRI measures the roughness of a road in terms of meters per km. An IRI of 2.5 means the road is almost smooth.

## ECONOMIC REEVALUATION

### A. General

1. The methodology used in the economic reevaluation was similar to that used in the appraisal. The with- and without-project situations were compared to determine the effects of introducing the provincial project roads. The main economic benefits at appraisal consisted of savings in vehicle operating costs (VOCs) and time savings. The appraisal carried out economic evaluations for phases 1 and 2 of the subproject roads. In undertaking the economic reevaluation at project completion it was determined that it was not possible to undertake a reevaluation of the same roads as at appraisal. This is due to the fact that some of the roads evaluated at appraisal were not constructed due to high inflation combined with a depreciation of the Vietnamese currency, and thus the allocated funding was not sufficient to achieve the appraisal target of 1,200 kilometers (km).

2. The economic evaluation was based on a representative sample of roads selected from several provinces. The assumptions in the appraisal report were modified, where necessary, based on updated information. The calculation of the economic internal rate of return (EIRR) considered the economic benefits and costs during construction plus 20 years of operation as at appraisal. The project road networks for each province were evaluated and all benefits and costs in the analyses are expressed in 2012 constant prices. The methodology used to calculate the EIRR was the Highway Design and Maintenance (HDM-4) model.<sup>1</sup>

### B. Roads and Traffic

3. Table A10.1 lists the selected roads by province. The total length of all roads selected is 228.56 km, which represents 31% of the 729.73 km of roads constructed by the project.

#### 1. Roads

4. The roads improved under the project were improved to either Viet Nam single-lane (Class V, i.e., 5.5 meters [m] wide) or two-lane (Class IV, i.e., 6.0 m wide), sealed with double bitumen surface treatment or asphalt concrete. The average surface roughness levels, as measured against the International Road Roughness Index (IRI)<sup>2</sup> for each section of road, were IRI 8.0–12.0 m/km before improvement and IRI 2.0–5.0 m/km after improvement.<sup>3</sup>

---

<sup>1</sup> The HDM model was developed by the World Bank and is used worldwide as best practice.

<sup>2</sup> The IRI is measured in meters per kilometer.

<sup>3</sup> Details of the characteristics of subproject roads before improvement were obtained from the consultants' reports.

**Table A10.1: Province Roads and Length** (kilometers)

<b>Province</b>	<b>Road</b>	<b>Length</b>
Quang Binh	PR 566	8.29
	Nam Long–My Trung	11.42
	PR 10	31.59
Quang Tri	PR 571	10.4
	Dai Do–Thuan Phuoc	16.54
	PR 76	7.11
Quang Nam	PR 611	19.0
Gia Lai	PR670	40.45
Dak Lak	PR 685	15.15
	PR 690	16.52
	PR 682	10.07
Phu Yen	PR 646	14.95
Khanh Hoa	PR 2	5.19
	PR 9	21.88
<b>Total</b>		<b>228.56</b>

Source: Project completion report of the executing agency.

## 2. Traffic Counts

5. Traffic count data for the road sections analyzed were obtained from project management unit number 1 (Tables A10.2–A10.8).

**Table A10.2: Traffic Counts in Quang Binh Province, 2006–2012**

<b>Year</b>	<b>Road Number or Name</b>	<b>Motorcycles</b>	<b>Cars</b>	<b>Light Trucks</b>	<b>Heavy Trucks</b>	<b>&gt; 3 Axle Trucks</b>	<b>Total</b>
2006	566	220	30	210	50	30	<b>540</b>
2007	566	340	37	216	52	35	<b>680</b>
2008	566	356	45	240	47	27	<b>715</b>
2009	566	472	62	248	88	38	<b>908</b>
2010	566	466	88	216	137	42	<b>949</b>
2011	566	557	79	271	125	58	<b>1,090</b>
2012	566	620	105	230	150	62	<b>1,167</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Heavy Trucks	> 3 Axle Trucks	Total
2006	Nam Long–My Trung	250	60	140	70	30	<b>550</b>
2007	Nam Long–My Trung	243	78	136	76	8	<b>541</b>
2008	Nam Long–My Trung	378	82	125	88	17	<b>690</b>
2009	Nam Long–My Trung	530	66	135	71	45	<b>849</b>
2010	Nam Long–My Trung	550	57	116	125	55	<b>905</b>
2011	Nam Long–My Trung	517	93	120	136	62	<b>930</b>
2012	Nam Long–My Trung	717	120	114	77	20	<b>1,050</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	Dong Nhan –Hoa Hai	400	20	45	15	10	0	<b>490</b>
2007	Dong Nhan – Hoa Hai	360	62	52	20	15	0	<b>509</b>
2008	Dong Nhan–Hoa Hai	350	78	38	18	37	0	<b>521</b>
2009	Dong Nhan–Hoa Hai	370	109	42	37	57	14	<b>629</b>
2010	Dong Nhan–Hoa Hai	287	120	33	66	64	14	<b>584</b>
2011	Dong Nhan–Hoa Hai	450	155	51	72	39	16	<b>783</b>
2012	Dong Nhan–Hoa Hai	361	139	34	80	93	20	<b>727</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	10	270	20	80	130	40	4	<b>544</b>
2007	10	285	33	92	88	27	4	<b>529</b>
2008	10	370	42	130	103	33	8	<b>686</b>
2009	10	386	69	110	137	56	8	<b>766</b>
2010	10	360	79	150	156	38	16	<b>799</b>
2011	10	380	55	220	178	46	30	<b>909</b>
2012	10	374	46	249	175	32	30	<b>906</b>

Source: Project management unit 1 and provincial departments of transport.

**Table 10.3: Traffic Counts in Quang Tri Province, 2006–2012**

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Total
2006	573A	404	2	5	12	1	0	<b>424</b>
2007	573A	691	4	14	27	1	1	<b>736</b>
2008	573A	624	6	31	61	11	1	<b>733</b>
2009	573A	520	11	41	25	3	0	<b>601</b>
2010	573A	546	7	29	12	1.5	0	<b>596</b>
2011	573A	505	10	20.5	21	2	0	<b>559</b>
2012	573A	395	11	14	12	1	3	<b>434</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Total
2006	571	633	11	7	14	5	2	<b>672</b>
2007	571	882	5	24	39	26	2	<b>977</b>
2008	571	156	1	8	15	3	0	<b>183</b>
2009	571	204	3	6	9	1	0	<b>222</b>
2010	571	661	13	29	43	20	4	<b>768</b>
2011	571	788	24	30	33	12	3	<b>889</b>
2012	571	529	30	29	34	29	5	<b>656</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Total
2006	Dai Do–Thuan Phuoc	500	60	100	110	6	1	<b>777</b>
2007	Dai Do–Thuan Phuoc	590	80	130	160	6	1	<b>967</b>
2008	Dai Do–Thuan Phuoc	590	90	150	350	30	6	<b>1,216</b>
2009	Dai Do–Thuan Phuoc	600	90	220	406	30	6	<b>1,352</b>
2010	Dai Do–Thuan Phuoc	800	170	260	400	28	4	<b>1,662</b>
2011	Dai Do–Thuan Phuoc	960	310	310	350	12	2	<b>1,944</b>
2012	Dai Do–Thuan Phuoc	1,150	370	380	420	12	2	<b>2,334</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	Total
2006	76	50	2	5	3	0	60
2007	76	50	2	5	3	0	60
2008	76	60	2	7	5	1	75
2009	76	65	3	8	6	2	84
2010	76	70	4	10	8	4	96
2011	76	75	4	12	10	5	106
2012	76	80	6	15	12	7	120

Source: Project management unit 1 and provincial departments of transport.

**Table A10.4: Traffic Counts in Quang Nam Province, 2006–2012**

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Mini Buses	Buses	Total
2006	611	4,952	119	104	202	121	22	46	36	<b>5,602</b>
2007	611	4,544	106	99	162	87	15	46	38	<b>5,097</b>
2008	611	4,631	85	109	87	73	21	47	40	<b>5,093</b>
2009	611	4,541	82	160	120	93	13	43	33	<b>5,085</b>
2010	611	4,811	103	151	123	56	15	50	37	<b>5,346</b>
2011	611	5,067	137	135	182	93	24	75	41	<b>5,754</b>
2012	611	5,702	159	147	208	175	22	107	70	<b>6,590</b>

Source: Project management unit 1 and provincial department of transport.

**Table A10.5: Traffic Counts in Gia Lai Province, 2006–2012**

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Mini Buses	Buses	Total
2006	670	209	4	9	4	5	0	1	0	231
2007	670	211	4	10	4	4	0	1	0	235
2008	670	256	5	12	10	7	2	2	1	296
2009	670	549	7	16	10	6	1	5	2	594
2010	670	315	9	18	20	10	2	5	2	381
2011	670	454	12	28	32	16	3	9	3	556
2012	670	422	15	36	20	16	5	6	5	525

Source: Project management unit 1 and provincial department of transport.

**Table A10.6: Traffic Counts in Dak Lak Province, 2006–2012**

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	682	20	0	2	2	0	0	0	24
2007	682	18	0	3	2	0	0	0	23
2008	682	22	0	2	3	0	0	0	27
2009	682	37	0	3	2	0	0	0	42
2010	682	95	9	8	12	0	0	28	153
2011	682	110	15	10	17	0	1	45	198
2012	682	148	12	12	15	1	0	48	236

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	685	33	0	0	5	0	0	0	39
2007	685	40	0	0	4	1	0	0	45
2008	685	37	0	0	7	1	0	0	45
2009	685	30	0	0	4	1	1	0	35
2010	685	85	9	10	17	3	2	30	156
2011	685	108	12	17	15	7	2	38	199
2012	685	125	18	15	18	5	3	50	234

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Total
2006	690	20	0	0	2	0	0	22
2007	690	24	0	0	2	0	0	26
2008	690	17	0	0	5	0	0	22
2009	690	30	0	0	3	0	0	33
2010	690	28	0	0	4	0	0	32
2011	690	87	18	7	15	5	4	136
2012	690	105	23	9	17	7	2	163

Source: Project management unit 1 and provincial department of transport.

**Table A10.7: Traffic Counts in Phu Yen Province, 2006–2012**

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	646	4,666	25	57	32	11	2	25	4,818
2007	646	4,432	39	86	52	23	2	29	4,663
2008	646	4,524	71	105	58	21	2	60	4,840
2009	646	4,659	73	108	59	22	2	61	4,985
2010	646	4,615	103	124	63	19	2	90	5,016
2011	646	5,067	73	112	80	40	5	78	5,455
2012	646	3,807	108	88	98	24	6	107	4,238

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Buses	Total
2006	Cay Keo–An Ninh	4,433	24	54	30	10	2	24	4,577
2007	Cay Keo–An Ninh	4,210	37	82	49	22	2	28	4,430
2008	Cay Keo–An Ninh	4,297	67	100	55	20	2	57	4,598
2009	Cay Keo–An Ninh	4,426	69	103	56	21	2	58	4,735
2010	Cay Keo–An Ninh	4,384	98	118	60	18	2	86	4,765
2011	Cay Keo–An Ninh	4,814	69	106	76	38	5	74	5,182
2012	Cay Keo–An Ninh	3,617	103	84	93	23	6	102	4,026

Source: Project management unit 1 and provincial department of transport.

**Table A10.8: Traffic Counts in Khanh Hoa Province, 2006–2012**

Year	Road Number	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	> 3 Axle Trucks	Mini Buses	Buses	Total
2006	2	601	23	81	6	16	1	2	2	<b>732</b>
2007	2	698	37	63	26	42	1	24	7	<b>898</b>
2008	2	700	106	281	116	107	3	21	10	<b>1,344</b>
2009	2	846	108	280	118	110	3	22	12	<b>1,499</b>
2010	2	1,046	110	283	115	115	5	25	15	<b>1,714</b>
2011	2	1,120	115	288	119	120	4	23	20	<b>1,809</b>
2012	2	1,095	112	291	118	111	3	20	15	<b>1,765</b>

Year	Road Number or Name	Motorcycles	Cars	Light Trucks	Medium Trucks	Heavy Trucks	Mini Buses	Buses	Total
2006	9	181	19	14	18	10	7	5	<b>254</b>
2007	9	196	18	18	10	5	6	5	<b>258</b>
2008	9	220	21	17	16	16	14	12	<b>316</b>
2009	9	231	23	16	18	21	14	12	<b>335</b>
2010	9	255	24	18	22	25	16	12	<b>372</b>
2011	9	267	26	17	25	27	16	14	<b>392</b>
2012	9	271	28	20	26	26	16	14	<b>401</b>

Source: Project management unit 1 and provincial department of transport.

### 3. Traffic Growth Rate Assumptions

6. The forecasting of growth in traffic demand has been based on transport demand elasticity and the growth in gross domestic product (GDP) at the national, regional, and provincial levels; population growth; and growth in per capita income. A range of elasticity values have been employed in previous studies in Viet Nam over the last decade, ranging from 1.2 to 1.5 for estimating demand growth for passenger transport and from 1.0 to 1.4 for freight transport growth.<sup>4</sup> Motorcycle demand has regularly been based upon an elasticity of 2.0. The traffic growth rates adopted at appraisal varied between 7.2% and 13.5% per annum. These estimates are considered high in light of recent forecasts of provincial GDP growth, which implies an elasticity for motorized traffic without motorcycles of significantly less than 1, varying between 0.3 to 0.6, while based on national GDP the calculated elasticity varies between 0.6 and 1.1. For motorcycles, the elasticity varies between just below 1 to 1.4 depending on whether provincial or national GDP is used. The traffic forecasts have thus been reduced in the economic reevaluation and are considered conservative. The traffic growth rates used to forecast future traffic are in Table A10.9.

<sup>4</sup> Previous studies include the Phnom Penh to Ho Chi Minh City Highway Project, Cambodia and Viet Nam; Second Road Improvement Project, Viet Nam; Provincial Roads Improvement Sector Project, Viet Nam; Central Region Transport Networks Improvement Sector Project, Viet Nam; and Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant for Additional Financing to the Socialist Republic of Viet Nam: Greater Mekong Subregion Southern Coastal Corridor Project. Manila.

**Table A10.9: Annual Traffic Growth Rates (%)**

Vehicle Type	Growth Period		
	2012–2016	2016–2023	2023–2033
Car	6	5	4
Minibus	7	6	5
Bus	7	6	5
Light truck	8	7	6
Medium truck	8	7	6
Heavy truck	8	7	6
Motorcycle	9	8	6

Source: Asian Development Bank staff estimates.

## **B. Economic Costs**

### **1. Construction Costs**

7. The economic construction costs were derived from the financial costs of civil works, physical contingencies, land acquisition and resettlement, and construction supervision, excluding price escalation, price contingencies, and interest during construction. All financial costs were converted to economic costs by deducting taxes and duties and by differentiating local currency costs into indirect foreign exchange and local currency costs. A standard conversion factor of 0.90 was applied to the local currency costs of nontradable items.<sup>5</sup>

### **2. Maintenance Costs**

8. Incremental maintenance costs were calculated as the difference between the costs of routine and periodic maintenance with and without the project, in 2012 prices. For the without-project case, essential maintenance would be undertaken to ensure that the existing gravel or earth surfaces would be kept open to traffic. The surface of the roads in the without-project situation would require repairs such as major regravelling and spot regravelling. In the with-project case, both routine and periodic maintenance are necessary. Routine maintenance, such as pothole patching, shoulder maintenance, and cleaning culverts, would be required. Periodic maintenance varies with the traffic volume. The Highway Design and Maintenance (HDM-4) model has been set to trigger repairs, such as pothole patching, crack sealing, and resealing with a single bituminous layer, depending on the surface roughness as measured by the IRI. Unit maintenance costs were obtained from other recent projects in Viet Nam and from discussions with provincial departments of transport.

<sup>5</sup> The standard conversion factor of 0.90 is consistent with other recent projects in Viet Nam, e.g., ADB 2011. Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Socialist Republic of Viet Nam for Transport Connections in Northern Mountainous Provinces Project. Manila; and ADB 2013. Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Grant for Additional Financing to the Socialist Republic of Viet Nam: Greater Mekong Subregion Southern Coastal Corridor Project. Manila.

## **C. Economic Benefits**

### **1. General**

9. The estimated economic benefits were based on a comparison of the with- and without-project cases. Without the project, the roads would generally have been in either poor or fair condition. They would accommodate only low vehicle speeds, and therefore would have caused high vehicle operating costs (VOCs). With the project, the roads would be in good condition. With the improved surface condition, higher vehicle speeds would then be possible, which, in turn, would reduce VOCs.

10. The major economic benefits of the project were quantified in terms of reduction in VOCs due to an improvement in the road surface condition, and time savings as at appraisal. The HDM-4 model was used to estimate the benefits, using updated parameters including traffic, traffic growth, and costs. The model predicts pavement deterioration and estimates yearly vehicle operating costs over the life of the investment for various strategies of improvement. Time savings benefits were also calculated. The value of time saved during nonworking time has been valued at one-third of the value of time saved during working hours. The calculation of passenger time savings was based on the estimated economic values of time, observed average vehicle occupancy rates, and the calculated time savings resulting from higher vehicle speeds.

### **2. Results of the Economic Analysis**

11. The economic analysis was undertaken on a network basis, as at appraisal, and results are given for each province in the selected representative sample. The EIRR for the project as a whole is 27.1% indicating its economic viability. The EIRR calculated for each province is in Table A10.10. The results show that the subprojects have an EIRR greater than the economic opportunity cost of capital, i.e. 12%, and are thus economically feasible.

**Table A10.10: Summary of Net Benefits, Calculated Net Present Value, and Economic Internal Rate of Return (\$ million)**

<b>Year</b>	<b>Quang Binh</b>	<b>Quang Tri</b>	<b>Quang Nam</b>	<b>Gia Lai</b>	<b>Dak Lak</b>	<b>Phu Yen</b>	<b>Khanh Hoa</b>	<b>Total Project</b>
2008	-1.17	-2.19			-2.08			-5.44
2009	-1.17	-1.44	-2.47		-1.63			-6.71
2010	-1.06	-1.29	-1.77	-2.19	0.72	-1.56	-2.48	-9.63
2011	-2.03	-0.61	1.73	-1.71	0.22	-0.94	-2.03	-5.37
2012	-0.72	1.41	2.76	-1.70	0.36	-0.93	0.01	1.20
2013	2.54	2.12	3.07	0.74	0.31	1.63	0.53	10.94
2014	1.55	2.44	2.87	0.70	0.50	1.48	0.54	10.09
2015	2.32	1.90	3.42	0.77	0.59	1.82	0.89	11.71
2016	3.37	2.65	3.73	0.90	0.40	2.01	0.68	13.74
2017	2.04	2.99	3.50	0.85	0.36	1.86	0.73	12.34
2018	3.00	2.40	4.04	0.92	0.65	2.20	1.12	14.32
2019	4.12	3.20	3.46	1.09	0.86	2.41	0.84	15.98
2020	2.57	3.54	4.64	1.04	0.95	2.28	0.97	15.98
2021	2.36	2.23	5.34	1.10	0.33	2.64	1.37	15.36
2022	5.04	4.14	5.78	1.29	0.78	2.86	0.81	20.71
2023	3.79	4.51	5.59	1.23	1.15	2.71	1.31	20.29
2024	5.37	3.94	6.23	1.30	0.90	3.04	1.76	22.55
2025	6.55	4.82	6.58	1.48	0.68	3.24	1.33	24.68
2026	4.64	5.19	5.43	1.43	1.22	2.37	1.60	21.89
2027	6.34	4.65	7.89	1.51	1.07	3.86	2.07	27.38
2028	7.63	4.77	8.48	1.70	0.84	4.16	1.49	29.07
2029	4.16	5.88	8.51	1.66	1.45	4.09	1.96	27.71
2030	7.86	5.99	9.43	1.74		4.56	2.17	31.74
2031	3.26	6.50		1.99		4.88	1.07	17.70
2032	3.08	0.10		0.17		4.82	1.47	9.64
<b>NPV<sup>a</sup></b>	<b>9.76</b>	<b>9.61</b>	<b>19.83</b>	<b>0.89</b>	<b>0.28</b>	<b>9.79</b>	<b>1.45</b>	<b>47.02</b>
<b>EIRR</b>	<b>26.7%</b>	<b>26.6%</b>	<b>49.3%</b>	<b>14.2%</b>	<b>13.0%</b>	<b>36.6%</b>	<b>15.6%</b>	<b>27.1%</b>

EIRR = economic internal rate of return, NPV = net present value.

<sup>a</sup> NPV is based on discounting at 12%.

Source: Asian Development Bank estimates.

## LAND ACQUISITION, RESETTLEMENT, AND ETHNIC MINORITIES

### A. Background

1. A resettlement policy framework (RPF) and four resettlement plans for Binh Thuan, Lam Dong, Nghe An, and Thuan Thie Hue Phase 1 road networks had been prepared at appraisal in accordance with ADB's Policy on Involuntary Resettlement. Consultations with and participation of affected communities and local government agencies were carried out during the preparation of the RPF and resettlement plans. The RPF and resettlement plans required that everyone affected by land acquisition and resettlement was adequately compensated for lost assets and demanded that sufficient measures were taken to ensure that they are able to restore pre-project living standards. Special assistance was to be provided to the poorest and most vulnerable people.

2. The four resettlement plans for Phase 1 were to be updated during project implementation, and resettlement plans for phases 2 and 3 were to be prepared following the detailed designs of each subproject. Updating and preparation of resettlement plans involves consultations and community participation; detailed measurement surveys; establishment of compensation unit rates for all categories of losses and allowances; and formulation of rehabilitation measures for severely affected, very poor, and other vulnerable groups. Disclosure of resettlement plans was to be through the distribution of project information brochures (in Vietnamese and, as required, minority languages) to the affected communities. Copies of resettlement plans were to be placed in provincial, district, and commune offices. All resettlement plans submitted to ADB for review were to be posted on the ADB website immediately upon ADB approval.

### B. Land Acquisition and Resettlement

#### 1. Implementation Arrangements

3. The implementation of resettlement activities required the involvement of agencies at the national, provincial, district, and commune levels. The provisions and policies of the RPF and resettlement plans formed the legal basis for the implementation of resettlement activities. The key resettlement agencies and their responsibilities with respect to land acquisition and resettlement under the project were as follows:

4. **Ministry of Transport.** The Ministry of Transport was the executing agency, responsible for approving the project documents, providing budget and guiding Project Management Unit number 1 (PMU-1) to implement, coordinate, and carry out internal monitoring of the project, including monitoring of issues related to compensation, resettlement, and land acquisition.

5. **Project Management Unit No. 1.** PMU-1 was the agency trusted by the Ministry of Transport as the project owner. It had overall responsibility for management and internal monitoring of project implementation. PMU-1 was responsible for coordination of several tasks related to land acquisition and resettlement, including (i) providing the necessary documentation and the schedule of the project civil works to local resettlement implementation organizations to carry out their activities; (ii) coordinating with local authorities and resettlement implementing agencies to facilitate information dissemination, the campaign on land acquisition, and the handing over of land to the project for civil works in accordance with the project's and Viet Nam's regulations; (iii) transferring sufficient budget in a timely manner to relevant local subproject authorities for timely payment of compensation and assistance allowances, and

relocation of affected persons; and accounting for the cost of resettlement plan implementation carried out by the local agencies in the overall cost of the whole project; (iv) preparing and carrying out the required procedures if during the implementation the compensation, assistance, and resettlement costs exceeded the estimated cost reported in the project approval document; and (v) supervising and monitoring resettlement, and ensuring the progress of compensation, resettlement, and land acquisition in accordance with project implementation.

6. **Implementation consultants.** The implementation consultants were to provide technical assistance to PMU-1 and the local PPMUs on the preparation, implementation, and internal monitoring of all resettlement activities.

7. **Provincial peoples committees.** The main responsibilities and tasks of the provincial people's committees (PPCs) included (i) approving general compensation, assistance, and resettlement for the subprojects, submitted by the consultant, and the detailed options updated and submitted by the Resettlement Subproject Management Unit (i.e., the final, updated resettlement plan); (ii) assigning subproject resettlement tasks to one or more capable organization for the management and implementation of compensation, assistance, and resettlement activities in the province; and (iii) coordinating with the Resettlement Subproject Management Unit to carry out the land acquisition plan and disseminate information on the project's resettlement policy.

8. **Resettlement Subproject Management Unit.** The PPCs assigned a local agency to implement all of the subprojects' compensation, resettlement activities, and land acquisition as independent resettlement subprojects. On behalf of PPCs, the assigned agency was responsible for daily implementation or coordinating implementation and daily monitoring of resettlement implementation in accordance with the approved resettlement plan for respective subprojects.

9. **Independent monitoring organization.** One or more specialized in social science agencies or institutes must be identified and engaged for external monitoring and evaluation of resettlement plan implementation for the whole project or separate subprojects. PMU-1 signed a contract with an external monitoring agency.

## 2. Implementation Activities

10. The reduction in the scope of the project due to cost escalations led to some subprojects being dropped. Due to these changes, resettlement plans for several subprojects had to be revised.. The lack of completion of resettlement and compensation activities were a critical issue causing construction delays in all phases. In Phase 3 subprojects, critical issues were delays in the finalization and submission of resettlement plans due to (i) inadequate coordination between parties concerned including between PMU-1 and the implementation consultant and between the provincial project management units (PPMUs) and the local authorities in approving technical designs and cost estimates, bidding documents, and social safeguard reports of subprojects, and (ii) the limited quality of resettlement plans. An ADB special loan review mission in September 2009 visited four provinces to review, discuss, and work out with PMU-1, PPMUs, and local authorities' practical measures to resolve the pending resettlement issues.

11. In some cases, permanent or temporary land acquisition for road rehabilitation and the construction of new bridges caused a significant impact on local population. Mitigating measures were taken during the design phase to minimize the effects, but land acquisition was still needed. Comprehensive resettlement plans were made for each subproject in all project

provinces during the planning stage of the project. Resettlement plans for phases 1 and 2 were undertaken by the civil works preparation consulting services, while those for Phase 3 were undertaken by the consulting supervision implementation consultant. An update of some resettlement plans for eight re-included subprojects in seven provinces and four new resettlement plans for four new subprojects in three provinces were also undertaken in 2011.

12. As noted, the implementation of resettlement plans in all three phases was not without difficulty. A number of complications slowed down implementation of resettlement, which in turn delayed the implementation of some civil works contracts. One major contributing factor was the time lag from when the resettlement plan was finalized to when the affected persons were compensated and/or relocated. Increases in costs, such as land, house construction materials, and labor, made many affected persons displeased with the agreed compensation. In addition, some land or property had been developed and had increased in value, and some had changed ownership. Though price adjustments had been undertaken, some affected persons still considered their property to be undervalued and either refused to accept the compensation or did not resettle as agreed. Some affected persons also expected an additional increase in the value of their land and/or property due to the perceived general development in the locality as a result of the upgraded road. Lack of awareness and clear understanding among some affected persons of the consequences related to resettlement and compensation caused problems. There were examples of people living close to high bridge approaches protesting and preventing the civil works contractors from working when they realized how high the embankments would be and how this would affect their movement and daily lives.

13. Although the number of persons affected by each subproject component may have been significant, the level of the resettlement impacts in most cases was marginal. This is because the designs of the subproject roads were mostly based on existing alignments. In the process of design the consultants, in close consultation with local authorities and agencies, also adopted mitigation measures to avoid land acquisition wherever possible.

14. The actual cost of land acquisition and resettlement was \$12.28 million compared to the appraisal estimate of \$4.90 million. The increase is due to changes that had to be made to resettlement plans as some subprojects changed as a result of high inflation costs. The cost escalations of land, house construction materials, and labor increased the overall resettlement and land acquisition costs. In addition, some affected persons requested compensation higher than market rates, leading to difficulties in finalizing compensation payments. Table A11.1 gives details such as land acquisition, resettlement, and number of households by province and by phase.

### **C. Ethnic Minorities**

15. Some sections of certain subproject components passed through areas inhabited by ethnic minorities. Because of this, an ethnic minority development framework (EMDF)<sup>1</sup> was prepared at appraisal to guide the preparation of ethnic minority development plans (EMDPs) and ethnic-minority-specific actions (EMSAs) in accordance with ADB's Policy on Indigenous Peoples.

---

<sup>1</sup> The EMDF included other measures to address the needs of ethnic minorities, such as incorporation of road safety measures in road designs, an HIV/AIDS and sexually transmitted infections awareness and prevention program, and sustainable agricultural production.

16. The consultants undertaking the EMDP, which was funded by the Nordic Development Fund, found that the ethnic minorities made up the majority of the poorest in the zone of influence of the subproject roads. They also determined that ethnic minorities would not necessarily benefit from the subproject roads and easier access to social services because of the long distances between villages and subproject roads and the poor condition of feeder roads. From the participatory screening field work, and the commune EMDP and EMSA proposals in all three phases, the road subproject networks focused on:

- improvement of community development, village infrastructure, and access between ethnic minority villages and subproject roads;
- cultural empowerment and improvement of ethnic minority peoples' capacity to benefit from improved roads, and improved services outside and within villages; and
- improvement of public health services available to ethnic minority people.

17. Discussions with various ethnic minority groups resulted in a list of 18 proposed activities. The selected activities related to cultural facilities, improving child care and education, reducing women's work loads, improving transport and trade, increasing agricultural production, eradicating hunger, and reducing malnutrition and poverty. Table A11.2 gives details of the EMDP by province, activity undertaken, cost, and the number of beneficiaries.

TABLE A11.1: LAND ACQUISITION AND RESETTLEMENT

No.	Location	Affected Area (hectares)		Affected Household (number)		Affected Commercial and/or Public Facilities (number)		Resettlement Cost (D million)		Total	UXO Removal (whole project)
		Total	Residential Land	Total	Completely Removed	Total	Completely Removed	Land Acquisition and Resettlement	Resettlement Management		
1	Phases 1 and 2										
	Nghe An Province	12.24	3.15	2,829.00	22.00	35.00	35.00	24,149.80	314.00	24,463.80	9,195.67
	Thanh Chuong District	7.52	2.98	1,724.00	10.00	32.00	32.00	18,027.80	190.00	18,217.80	9,195.67
	Nam Dan District	0.95	0.17	47.00	8.00	2.00	2.00	1,306.50	25.00	1,331.50	
	Nghia Dan District	2.82		1,012.00	4.00	1.00	1.00	4,399.90	90.00	4,489.90	
2	Quy Hop	0.95		46.00				415.00	9.00	424.00	
	Thua Thien Hue Province	21.35		722.00	0.00	3.00	3.00	3,847.90	75.32	3,923.22	
	Phu Vang District	5.00		216.00		1.00	1.00	1,517.30	23.46	1,540.76	
	Ouang Dien District	2.80		150.00		1.00	1.00	878.60	51.86	930.46	
	Phng Dien District	13.55		356.00		1.00	1.00	1,452.00		1,452.00	
3	Binh Thuan Province	5.42		138.00	0.00	1.00	1.00	1,830.30		1,830.30	
	Bac Binh District	2.47		87.00				952.90		952.90	
	Tuy Phong District	2.95		51.00		1.00	1.00	877.40		877.40	
4	Lam Dong Province	70.94		1,201.00	2.00	1.00	1.00	8,106.00	18.60	8,124.60	
	Lam Ha District	18.03		558.00	1.00	1.00	1.00	2,144.60			
	Di Linh District	19.07		122.00				780.00			
	Bao Lam District	33.84		521.00	1.00			5,181.50			
5	Ha Tinh Province	51.19	3.11	2,281.00	35.00	3.00	3.00	22,747.50	540.81	23,288.31	
	Huong Son District	9.98	0.99	256.00	1.00	1.00	1.00	1,953.80			
	Can Loc District	17.01	0.91	930.00	16.00			12,554.10			
	Due Tho District	14.35	0.42	713.00	11.00	2.00	2.00	5,797.40			

		Affected Area (hectares)		Affected Household (number)		Affected Commercial and/or Public Facilities (number)		Resettlement Cost (D million)		UXO Removal (whole project)	
No.	Location	Total	Residential Land	Total	Completely Removed	Total	Completely Removed	Land Acquisition and Resettlement	Resettlement Management	Total	
6	Loc Ha District	9.85	0.99	382.00	7.00			2,442.20			
	Quang Binh Province	19.25	5.45	922.00	0.00	5.00	5.00	16,185.50	29.85	16,215.35	
	Bo Trach District	10.03	2.98	500.00		3.00	3.00	8,728.30			
	Quang Ninh District	7.98	1.23	350.00		2.00	2.00	6,481.10			
7	Le Thuy District	1.24	1.24	72.00				976.00			
	Quang Tri Province	14.42	0.42	1,492.00	5.00	4.00	4.00	8,362.70	165.88	8,528.58	
	Trieu Phong District	9.46	0.32	1,076.00	5.00	2.00	2.00	6,885.80	137.76	7,023.56	
	Gio Linh District	2.75	0.10	260.00		1.00	1.00	816.40	16.12	832.52	
8	Vinh Linh District	2.21		156.00				660.40	12.00	672.40	
	Ninh Thuan Province	0.61	0.11	211.00	0.00	2.00	2.00	1,519.70		1,519.70	
	Ninh Hai District	0.45	0.11	144.00		1.00	1.00	763.40		763.40	
	Thuan Bac District	0.16		67.00		1.00	1.00	756.30		756.30	
9	Dak Lak Province	8.31	0.05	799.00	2.00	0.00	0.00	7,806.10	846.57	8,652.67	
	Buon Ma Thuot City	0.22		5.00				50.50	177.00	227.50	
	Buon Don District	0.53		37.00							
	Krong A Na District	4.18	0.05	591.00	2.00			4,062.50	510.75	4,573.25	
10	Cu Kuin District	3.38		166.00				3,693.10	158.82	3,851.92	
	Dak Nong Province	74.16	23.00	853.00	27.00	2.00	2.00	8,270.10	162.11	8,432.21	
	Krong No District	74.16	23.00	853.00	27.00	2.00	2.00	8,270.10	162.11	8,432.21	
	Phase 3										
11	Than Hoa Province	9.00	0.84	2,459.00	0.00	14.00	14.00	19,856.90		19,856.90	
	Yen Dinh District	0.19	0.08	330.00		1.00	1.00	1,353.70		1,353.70	
	Ha Trung District	0.92	0.37	758.00		6.00	6.00	7,468.90		7,468.90	
	Nga Son District	0.71	0.12	271.00		1.00	1.00	2,088.90		2,088.90	

No.	Location	Affected Area (hectares)		Affected Household (number)		Affected Commercial and/or Public Facilities (number)		Resettlement Cost (D million)		UXO Removal (whole project)
		Residential		Completely		Completely		Land Acquisition	Resettlement	
		Total	Land	Total	Removed	Total	Removed	and Resettlement	Management	Total
	Tho Xuan District	1.31		228.00		1.00	1.00	1,246.20		1,246.20
	Trieu Son District	1.53	0.03	783.00		3.00	3.00	2,184.90		2,184.90
	Nhu Thanh District	3.22	0.24	66.00		1.00	1.00	1,657.50		1,657.50
	Nhu Xuan District	1.12		23.00		1.00	1.00	3,856.90		3,856.90
12	<b>Da Nang City</b>	<b>25.16</b>	<b>0.93</b>	<b>909.00</b>	<b>38.00</b>	<b>6.00</b>	<b>6.00</b>	<b>28,984.40</b>		<b>28,984.40</b>
	Lien Chieu District	1.08	0.04	51.00				108.00		108.00
	Hoa Vang District	24.08	0.89	858.00	38.00	6.00	6.00	28,876.00		28,876.00
13	<b>Quang Nam Province</b>	<b>10.62</b>		<b>331.00</b>	<b>3.00</b>	<b>0.00</b>	<b>0.00</b>	<b>6,613.20</b>	<b>120.31</b>	<b>6,733.51</b>
	Que Son District	10.62		331.00	3.00			6,613.20	120.31	6,733.51
14	<b>Quang Ngai Province</b>	<b>9.70</b>	<b>2.36</b>	<b>1,552.00</b>	<b>24.00</b>	<b>1.00</b>	<b>1.00</b>	<b>12,813.20</b>	<b>809.51</b>	<b>13,622.71</b>
	Binh Son District	1.37	0.64	727.00	3.00	1.00	1.00	3,704.70	809.51	4,514.21
	Son Ha District	5.75	1.37	557.00	21.00			7,831.90		7,831.90
	Ba To District	2.58	0.35	268.00				1,276.60		1,276.60
15	<b>Binh Dinh Province</b>	<b>3.12</b>	<b>0.52</b>	<b>510.00</b>	<b>2.00</b>	<b>2.00</b>	<b>2.00</b>	<b>6,274.50</b>		<b>6,274.50</b>
	Hoai An District	0.19		65.00				121.60		121.60
	Phu My District	0.03		77.00				260.40		260.40
	Hoai Nhon District	2.90	0.52	368.00	2.00	2.00	2.00	5,892.50		5,892.50
16	<b>Phu Yen Province</b>	<b>5.00</b>	<b>0.18</b>	<b>735.00</b>	<b>5.00</b>	<b>4.00</b>	<b>4.00</b>	<b>6,097.00</b>	<b>117.00</b>	<b>6,214.00</b>
	Son Hoa District	4.50		700.00	1.00	1.00	1.00	1,889.70	32.00	1,921.70
	Tuy An District	0.50	0.18	35.00	4.00	3.00	3.00	4,208.00	85.00	4,293.00
17	<b>Khanh Hoa Province</b>	<b>0.79</b>		<b>124.00</b>	<b>0.00</b>	<b>2.00</b>	<b>2.00</b>	<b>1,264.90</b>	<b>15.16</b>	<b>1,280.06</b>
	Dien Khanh District	0.24		25.00		1.00	1.00	380.90		380.90
	Khanh Son District	0.54		99.00		1.00	1.00	884.00	15.16	899.16

		Affected Area (hectares)		Affected Household (number)		Affected Commercial and/or Public Facilities (number)		Resettlement Cost (D million)			UXO Removal (whole project)
No.	Location	Total	Residential Land	Total	Completely Removed	Total	Completely Removed	Land Acquisition and Resettlement	Resettlement Management	Total	
18	Kon Tum Province	9.06	0.76	1,703.00	0.00	4.00	4.00	14,604.00	862.96	15,466.96	
	Kon Tum City	4.60	0.41	1,344.00		2.00	2.00	8,044.70	749.70	8,794.40	
	Tu Mo Rong District	4.46	0.35	359.00		2.00	2.00	6,559.30	113.26	6,672.56	
19	Gia Lai Province	3.20	0.02	356.00	0.00	2.00	2.00	2,580.60	145.69	2,726.29	
	Mang Yang District	0.71		55.00		1.00	1.00	280.60	8,100.00	8,380.60	
	Dak Doa District	0.64		45.00				214.40	22.03	236.43	
	Chu Pah District	1.54		149.00				1,159.50	89.00	1,248.50	
	Krong Pah District	0.31	0.02	107.00		1.00	1.00	559.70	9.55	569.25	
	Total phases 1, 2, and 3	353.54	40.90	20,127.00	165.00	91.00	91.00	201,914.30	4,223.77	206,138.07	9,195.67

**TABLE A11.2: ETHNIC MINORITY DEVELOPMENT PROGRAM**

No.	Location	Ethnic Group	Activity / Scheme	Cost (D)	Number of Beneficiaries
<b>1</b>	<b>Thanh Hoa Province</b>			<b>577,509,000</b>	
1.1	Nhu Thanh District	Muong, Thai			
	Xuan Tho Commune		Repair of village gate and toilets	410,884,000	515
1.2	Nhu Xuan District	Muong, Thai, Tho			
	Thuong Ninh District		Repair of village road	166,625,000	762
<b>2</b>	<b>Nghe An Province</b>			<b>1,455,336,000</b>	
2.1	Nghia Dan District	Tho, Thai			
	Nghia Minh Commune		Repair of village road	177,480,000	349
	Nghia Lam Commune		Repair of village road	319,464,000	1037
	Nghia Yen Commune		Repair of village road	212,976,000	966
	Nghia Hung Commune		Repair of village road	106,488,000	272
	Nghia Mai Commune		Repair of village road and building of kindergarten yard	567,936,000	1043
	Nghia Thinh Commune		Repair of kindergarten	70,992,000	320
<b>3</b>	<b>Quang Binh Province</b>			<b>383,982,000</b>	
3.1	Le Thuy District	Van Kieu			
	Ngan Thuy Commune		Building of concrete yard for the commune's Culture House	160,736,408	254
	Lam Thuy Commune		Repair of village road to the kindergarten and commune culture house	223,245,592	703
<b>4</b>	<b>Quang Ngai Province</b>			<b>761,696,000</b>	
4.1	Son Ha District	H re, Xe Dana			
	Son Thuy Commune		Drilling well and installing clean water pipes	1 <sup>0</sup> 0.1/1,000	
	Son Ky Commune		Upgrading of kindergarten's toilet and irrigation channel	190,424,000	1,310
	Son Ba Commune		Building of culture house yard	190,424,000	828
4.2	Ba To District	H re			
	Ba Ngac Commune		Building of culture house yard	190,424,000	NA

No.	Location	Ethnic Group	Activity / Scheme	Cost (D)	Number of Beneficiaries
<b>5</b>	<b>Phu Yen Province</b>			<b>425,952,000</b>	
		Ba Na, Ha Roi, Ede, Thai , Dao			
5.1	Son Hoa District				
	Son Phuoc Commune		Building of fence of commune culture hall	141,984,000	747
	Suoi Bac Commune		Building of fence of commune culture hall	141,984,000	477
	Son Hoi Commune		Building of fence of commune culture hall	141,984,000	435
<b>6</b>	<b>Khanh Hoa Province</b>			<b>423,847,000</b>	
6.1	Khanh Son District	Rag Ley			
	Son Hiep Commune		Building of concrete road	105,961,750	410
	13a Cum Bac Commune		Building of gate and fence of culture house	105,961,750	705
	Son Trung Commune		Building of gate and fence of culture house	105,961,750	212
	To Hap Town		Building of commune's toilet	105,961,750	325
<b>7</b>	<b>Ninh Thuan Province</b>			<b>496,941,474</b>	
7.1	Ninh Hai District	Cham			
	Xuan Hai Commune		Building of commune road	146,320,932	1,346
7.2	Thuan Bac District	Rag Ley. Cham			
	Loi Hai Commune		Leveling and building concrete yard of communes culture house	133,088,753	377
	Bac Son Commune		Building of gate of culture house and roof of kindergarten	70,831,275	864
7.3	Thuan Bac District	Rag Ley, Hoa, Nung			
	Phuoc Trung Commune		Building of kitchen, clean water supply system, installing power counter	146,500,709	574
<b>8</b>	<b>Lam Hong Province</b>			<b>423,634,368</b>	
		Co Ho, Tay, Nung, Hoa			
8.1	Lam Ha District				
8.2	Lien Ha Commune	Co Ho, Muong	Building of kindergarten of Da Dang village	70,992,000	290
	Di Linh District				
	Tan Thuong Commune		Building of commune hall of village 4	141,984,000	870
	Tan Lam Commune		Inner decoration and equipment for village's hall	104,400,000	939
8.3	Bac Lam	K'Ho			

No.	Location	Ethnic Group	Activity / Scheme	Cost (D)	Number of Beneficiaries
9	Loc Ngai Commune	Dao, Mong, Thai, Muong, Ede, Tay, Nung, San Chay	Building of commune hall of village 4	106,258,368	581
	<b>Dak Nong Province</b>			<b>364,847,000</b>	
	9.1 Krone No District				
	Nam N'Dir Commune		Building of yard and road to commune hall	164,000,000	1,577
	Duc Xuyen Commune		Repair of water supply system	28,234,000	55
	Dak Nang Commune		Building of yard of commune hall	34,425,000	72
	Quang Phu Commune		Building of kindergarten's toilet	83,188,000	434
	All Commune		Training of gender balance and healthcare of mothers and newborns	55,000,000	NA
<b>10</b>	<b>Dak Lak Province</b>			<b>1,310,597,000</b>	
10.1	Buon Don District	Dao. Cham, Gia Rai, Hoa, Ede, Tay, Nung			
	Ea Bar Commune		Building of fence of commune' hall and commune's road	243,603,522	878
	Cuor Knia Commune		Building of fence of commune' hall and commune's kindergarten	275,760,045	933
	Tan Hoa Commune		Building of yard, fence and culture house	264,502,320	3,577
10.2	Buon Ma Thuot City	E De, Tay, Muong, Gia Rai			
	Cu Ebar Commune		Purchase of public loudspeaker and repairing of kindergarten	119,544,764	1,335
10.3	Krong A Na District	E De			
	Ea Bong Commune		Drilling of well, building of water tank for culture house, fence, and toilet	307,504,568	675
	Cu Kuin District	E De, Tay, Muong, Co Ho, Thai			
	Dray Bhang Commune		Building of fence and gate for commune's culture house	84,677,427	425
	All Commune		Training of healthcare of mother and new born	15,004,000	350
<b>11</b>	<b>Gia Lai Province</b>			<b>1,028,951,310</b>	
11.1	Chu Pah District	Gia Rai, Ba Na			
	Dak To Ve Commune		Building of fence of primary school and commune hall, clean water	212,976,000	327

No.	Location	Ethnic Group	Activity / Scheme	Cost (D)	Number of Beneficiaries
			well		
11.2	Ia Khucri Commune Dak Doa Dist.	Ba Na	Repair and building of fence and equipment for commune hall, building of commune's road, toilet, drainages, buildings	319,464,000	821
11.3	Dak Somei Commune Mang Yang Dist.	Ba Na	Repair and upgrading of class rooms, building of fence and concrete yard of culture house, upgrading of village sport yard	283,968,000	710
11.4	Kon Dong Town Krong Pa Dist.	Ba Na, Xe Dang	Repair and improving kindergarten, culture house, improving village road, and training in healthcare of mothers and newborns	141,543,310	728
	Phu Tuc Town		Building of drainage, gate, fence, and equipment for culture house	71,000,000	2356
<b>12</b>	<b>Kon Tum Province</b>			<b>1,206,427,016</b>	
12.1	Kon Tum City Chu H' Reng Commune	Ba Na, Xe Deng,	Improvement of concrete yard of commune culture hall	146,848,865	384
	Dak Ro Wa Commune		Improvement of concrete yard of commune culture hall	181,676,746	465
	Dak Cam Commune		Improvement of embankment of village road (2 kilometers)	75,520,568	268
12.2	Tu Mo Rona Dist	Ba Na, xa Dang, Gie-Trieng, Gia Rai, Muong			
	Dak Sao Commune		Improvement of village public house (3 rooms)	349,707,753	578
	Dak Na Commune		Improvement of village public house (2 rooms) and class room (1 room)	452,673,082	407
<b>Total (D)</b>				<b>8,859,720,168</b>	
NA – not available					

### QUANTITATIVE ASSESSMENT OF OVERALL PROJECT PERFORMANCE

Criteria	Assessment	Rating (0–3)	Weight (%)	Weighted Rating
Relevance <sup>a</sup>	Highly relevant	3	20	0.60
Effectiveness <sup>b</sup>	Effective	2	30	0.60
Efficiency <sup>c</sup>	Efficient	2	30	0.60
Sustainability <sup>d</sup>	Likely	2	20	0.40
<b>Overall Rating</b>	<b>Successful</b>			<b>2.20</b>

<sup>a</sup> Project objectives and outputs were relevant to the strategic objectives of the government and the Asian Development Bank.

<sup>b</sup> Project achieved its outcome.

<sup>c</sup> Project achieved objectives in an efficient manner.

<sup>d</sup> Project benefits and development impacts are sustainable.

Source: Asian Development Bank.

Rating Value	Relevance	Effectiveness	Efficiency	Sustainability
3	Highly relevant	Highly effective	Highly efficient	Most likely
2	Relevant	Effective	Efficient	Likely
1	Partly relevant	Less effective	Less efficient	Less likely
0	Irrelevant	Ineffective	Inefficient	Unlikely
Rating:	Greater than 2.7		=	Highly successful
	Between 1.6 and less than 2.7		=	Successful
	Between 0.8 and less than 1.6		=	Partly successful
	Less than 0.8		=	Unsuccessful

Source: Asian Development Bank.