

## ECONOMIC ANALYSIS

- 1. Macroeconomic context.** Viet Nam is growing rapidly as it transitions from a state-planned to a hybrid economy with an expanded private sector. Accession to the World Trade Organization in 2007 provided the foundation for increasing foreign direct investment, including in tourism. Tourism has since become an increasingly important contributor to economic growth (4.5% of GDP in 2012), employment (9.4%), exports (4.6%), and investments (8.3%).<sup>1</sup>
- 2. Sector context.** International visitor arrivals reached 6.84 million in 2012, a 14% increase from 2011. More than 60% of arrivals originate in Southeast and East Asia, with the People's Republic of China (PRC), Republic of Korea, Japan, and Cambodia as significant source markets. The country has more than 12,000 accommodation establishments with 235,000 bedrooms, of which only about 5% are rated 5-star. During 2001–2010, the accommodation subsector expanded by 15.8% per year and cumulative investment totaled \$11 billion for 247 projects. Room occupancy rates averaged about 60% during 2006–2012. The country has approximately 800 international travel operators and 10,000 agencies that cater to domestic tourists. The expanding network of international airports is served by 40 airlines and receives 56,000 flights per year with 11.2 million scheduled inbound seats.
- 3.** While Viet Nam has long stretches of pristine beaches and other diverse tourism assets, tourism activity is concentrated in Ha Long Bay, Hanoi, Hue-Hoi An, Da Nang, and Ho Chi Minh City, which collectively account for over one-third of all tourism investment.<sup>2</sup> Constraints to more inclusive and geographically dispersed growth are shortages of transport infrastructure and environmental services in secondary destinations,<sup>3</sup> weak market linkages between the tourism supply chain and other economic sectors, low service standards, and insufficient institutional support for micro-, small, and medium-sized enterprise development. To address these constraints the government has prioritized improving physical tourism infrastructure, lowering bureaucratic barriers that discourage entrepreneurship, and targeting vocational training and education for tourism workers and destination managers.
- 4. Economic rationale for government intervention.** Tourism development depends upon supporting public infrastructure to provide access to destinations and maintain tourist sites in good condition. Some investments required, such as access roads and waste treatment facilities, are too big for individual tourism investors. These facilities are pure public goods with a low degree of excludability and subtractability.<sup>4</sup> The market failure to produce these goods justifies public intervention. Moreover, proposed infrastructure is not solely to support tourism, but will also be utilized by the local population for other purposes such as transporting agricultural products from farms to markets more efficiently, and to access education and health services. Developing these facilities will catalyze additional private investment in tourism superstructure<sup>5</sup> and widen access to tourism-related economic opportunities such as retail services, food and craft production, and other cultural and recreation services, which would not occur without this infrastructure in place. The government is in the best position to address these market failures.

---

<sup>1</sup> World Travel and Tourism Council. 2013. *Travel and Tourism Economic Impact 2013: Viet Nam*. London.

<sup>2</sup> Viet Nam National Tourism Administration. 2013. *Viet Nam Tourism Statistics, 2000–2012*. Hanoi.

<sup>3</sup> World Economic Forum. 2011. *The ASEAN Travel and Tourism Competitiveness Report 2012*. Geneva.

<sup>4</sup> Excludability is the degree to which a potential user of a good or service can be excluded from using it. Subtractability refers to how much one user's consumption of a good or service subtracts from the ability of others to consume without raising production costs.

<sup>5</sup> Tourism superstructure includes all facilities developed especially to respond to the demands of visitors.

5. **Economic analysis.** The economic analysis of infrastructure subprojects uses preliminary designs and cost estimates, including the cost of capacity building and interest on the Asian Development Bank (ADB) loan. The methodology follows ADB's *Guidelines for the Economic Analysis of Projects*,<sup>6</sup> ADB's guidelines for economic analysis of tourism projects,<sup>7</sup> and the approach of other ADB-financed tourism projects.<sup>8</sup> The analysis compares the costs and benefits for the with- and without-project scenarios over 30 years from 2014 to 2043. The economic viability of the subprojects is assessed by computing the economic internal rate of return (EIRR) and net present value from a stream of incremental benefits and costs attributable to the investments. Using the domestic price numeraire, the economic costs are derived from financial cost estimates and segregated into tradeable and nontradeable components. Based on conversion factors taken from recent ADB studies, the financial costs are converted to economic costs using a shadow exchange rate factor of 1.1 and a shadow wage rate factor for unskilled labor of 0.70.<sup>9</sup> All costs and benefits are expressed in constant 2013 prices. Incremental operation and maintenance (O&M) costs are added to capital costs to obtain the total economic cost of the subprojects for each year. Alternative designs were assessed for each subproject and the least cost alternatives selected.

6. Economic benefits identified for each subproject were subject to sensitivity analysis to test their robustness to various changes in assumptions. The sensitivity scenarios assume (i) a 10% decrease in the expected number of foreign and domestic tourists that may arise from inadequate destination marketing or poor O&M practices, (ii) a 10% decrease in foreign tourist spending, (iii) a 10% increase in the investment cost, and (iv) 1-year delay in project implementation due to slower than expected consultant recruitment and procurement. The economic benefits identified and quantified are tourism benefits and vehicle operating cost (VOC) savings. Economic benefits identified but not quantified are increased land values for property owners, increased agricultural production and income for farmers living along the improved rural roads, and health benefits that will arise from better environmental services.

7. **Tourism benefits.** Project investments in access infrastructure, environmental services, capacity building, and better destination marketing within and around the tourism sites will induce an incremental influx of foreign and domestic tourists and encourage them to stay longer. The with-project assumptions for incremental annual increases in tourist arrivals range from 0.5% to 16%, while length of stay is expected to increase 0.4–0.8 days. This will generate increased tourist spending and create tourism-related jobs. The tourism benefits gained by the subprojects are the increased net expenditure of tourists. To compute the net expenditure of tourists, the analysis conservatively applies an income multiplier of 0.30 to incremental tourist spending to account for economic leakage. Considering potential substitution effects, the analysis then assumes only 50% of the net tourist expenditure is the project-induced benefit arising directly from the subprojects. Conservative assumptions for the number of tourist arrivals, average stay and spending, and projections under the with- and without-project scenarios are estimated by subproject taking into account historic trends, attractiveness of the subproject area, constraints on tourism development in the area, and the impact of the project on removing and/or releasing the constraints. Demand forecasts consider official statistics,

<sup>6</sup> ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila.

<sup>7</sup> ADB. 2007. *Tourism for Pro-Poor and Sustainable Growth: Economic Analysis of Tourism Projects*. *Economics and Research Department Technical Note Series*. No. 20. Manila.

<sup>8</sup> ADB. 2002. *Report and Recommendation of the President to the Board of Directors: Proposed Loans to the Kingdom of Cambodia, Lao People's Democratic Republic, and Socialist Republic of Viet Nam: GMS Mekong Tourism Development Project*. Manila.

<sup>9</sup> ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Socialist Republic of Viet Nam: Secondary Cities Development Project*. Manila.

visitor surveys undertaken during project preparation, and consultations with tourism industry stakeholders.

8. **Vehicle operating cost savings.** The roads leading to tourist sites included in the project are in very poor condition. Some are impassable during the rainy season. Traveling on the roads is dusty and uncomfortable; tourists have difficulty accessing the attractions. The VOC savings attributable to the project arise from improved road conditions measured by roughness, based on the international roughness index (IRI).<sup>10</sup> Reduced road distance is not considered in the analysis because all subprojects will upgrade existing alignments. The annual projections for vehicle traffic in the with- and without-project scenarios are based on recent growth of registered vehicles, assumptions for future vehicle ownership, and observed baseline traffic. The average one-way trip distance used to calculate the VOC savings is assumed to be 50% of the project road lengths, with each vehicle making one round-trip per day.

#### A. Output 1: Last-Mile Tourism Access Infrastructure Improved

9. **Da Dung Cave access improvement.** Da Dung Cave complex is a national heritage site comprising 14 caves, located 4 kilometers (km) from the Viet Nam–Cambodia border in Kien Giang province. In 2012, 93,233 mostly domestic visitors visited the caves. The lack of facilities and poor access limit investment by local entrepreneurs and discourages higher-spending international tourists from visiting. The subproject will improve the 2 km access road and construct a public tourist reception area with kiosks and sanitation. Economic benefits quantified are tourism benefits. The base-case EIRR is 15.4%.

10. **Lao Cai cultural exchange and tourist information center.** Lao Cai received nearly 950,000 visitors in 2012; 40% were international tourists. While Lao Cai has a wide range of cultural and natural attractions, most tourism activity is in Sapa and Bac Ha districts due to limited market awareness and lack of convenient tour and transport services to other areas. To address these constraints, the subproject will construct and support the launch of a tourist service center in the provincial gateway, Lao Cai city. Economic benefits quantified are tourism benefits. The base-case EIRR is 37.3%.

11. **Ta Phin–Ban Khoang access road improvement.** The ethnic Dao and Hmong settlements of Ta Phin and Ban Khoang in Lao Cai province are rich in tourist attractions but received only 7,500 visitors in 2012, down 40% from 2011 due to the deteriorating condition of the poor access road and limited market awareness. The subproject will rehabilitate the 15 km road leading to the villages and link destination marketing support to the new tourist service center in Lao Cai city. Economic benefits quantified are tourism benefits and VOC savings attributable to road improvements that will reduce roughness from IRI 13 to IRI 4. The base-case EIRR is 15.3%.

12. **Muang Phang access road improvement.** Poor road conditions discourage tourists from visiting Muang Phang National Tourism Site, famous for its role as the Vietnamese command center during the battle of Dien Bien Phu. The subproject will upgrade the 19 km access road that connects the site to Dien Bien city and construct roadside viewing platforms, kiosks, and other public tourism amenities to extend length of stay. Efforts to promote Muang Phang and improve presentation of the site will be linked to the Dien Bien Phu cultural exchange and tourist information center subproject. Economic benefits quantified are tourism

---

<sup>10</sup> IRI is the roughness index obtained from measured longitudinal road profiles. Since its introduction in 1986, IRI has become the road roughness index most commonly used worldwide for evaluating and managing road systems.

benefits and VOC savings attributable to road improvements that will reduce roughness from IRI 10 to IRI 4. The base-case EIRR is 36.1%.

13. **Dien Bien Phu cultural exchange and tourist information center.** Historic Dien Bien Phu Garrison, located 1 km west of Dien Bien city, received 450,000 mostly domestic visitors in 2012. To help improve visitor management at the site, better present Dien Bien's historic heritage, and promote other attractions in the province, the subproject will construct and support the launch of a cultural exchange and tourist information center at Dien Bien Phu Garrison. Economic benefits quantified are tourism benefits. The base-case EIRR is 49.4%.

## **B. Output 2: Environmental Services in Cross-Border Tourism Centers Improved**

14. **Phu Tu environmental improvement.** Phu Tu tourism zone, set in a pleasant seaside location in Kien Giang province, received approximately 320,000 visitors in 2012. The lack of essential environmental services together with uncontrolled encroachment of vendors onto the deteriorated access road is degrading the site and creating a public health hazard for visitors and the surrounding community. To address these problems, the subproject will construct wastewater treatment facilities, upgrade the 4.2 km access road and ferry pier, and construct a public market with sanitation and drainage. Economic benefits quantified are tourism benefits. The base-case EIRR is 17.9%.

15. **Ba Den Mountain environmental improvement.** Ba Den Mountain Park is an important pilgrimage site located 11 km northeast of Tay Ninh city and 52 km from the Viet Nam–Cambodia border. With more than 2.4 million tourist arrivals in 2012, the existing public amenities and environmental services are often overwhelmed, resulting in unsanitary and unsafe conditions. The subproject will construct a wastewater treatment plant, extend public concourses around the main pagoda, improve drainage and water supply, and construct a tourist information center, vendor kiosks, and public sanitation. Economic benefits quantified are tourism benefits. The base-case EIRR is 32.1%.

16. **Huong Tich Pagoda environmental improvement.** Huong Tich Pagoda, located 20 km north of Ha Tinh city, received 240,000 tourists in 2012. Lacking adequate water supply, sanitation, and solid waste management, rapid tourism growth is contributing to worsening environmental conditions and congestion that threaten the health and safety of visitors and local residents. The subproject will construct a wastewater treatment plant, improve drainage and water supply, upgrade the 5 km access road, and construct a visitor information center with kiosks and sanitation. Economic benefits quantified are tourism benefits. The base-case EIRR is 18.6%.

17. **Nguyen Du tourism zone environmental improvement.** Nguyen Du tourism zone in Ha Tinh province is a special national relic dedicated to the revered Vietnamese poet Nguyen Du. From 2010 to 2012 annual tourist visits doubled to 170,000 and are forecast to continue to grow rapidly. To facilitate continued growth in tourist arrivals and provide the facilities needed to extend tourist length of stay the subproject will upgrade sanitation, drainage, and public tourist amenities. Economic benefits quantified are tourism benefits. The base-case EIRR is 41.3%.

18. The summary results of the economic analyses and sensitivity tests are presented in the table.

## Summary Indicators

Subproject and Scenario	Subproject Area Population	Economic Cost (D million)	EIRR (%)	NPV (D million)	SV	SI
<b>Da Dung Cave Access Improvement</b>	6,000	39,910				
Base Case			15.4	9,920		
10% decrease in tourists			14.4	7,274	37.5	2.67
10% decrease in foreign tourist spending			12.6	1,766	12.2	8.22
10% increase in investment cost			15.0	8,709	81.9	1.22
1-year delay in project implementation			14.6	7,929	49.8	2.01
<b>Lao Cai Cultural Exchange and Tourist Information Center</b>	11,000	37,499				
Base Case			37.3	87,134		
10% decrease in tourists			34.8	84,559	338.4	0.30
10% decrease in foreign tourist spending			34.5	75,725	76.4	1.31
10% increase in investment cost			36.0	81,859	165.2	0.61
1-year delay in project implementation			31.8	78,885	105.6	0.95
<b>Ta Phin–Ban Khoang Access Road Improvement</b>	8,400	159,582				
Base Case			15.3	51,175		
10% decrease in tourists			14.5	40,498	47.9	2.09
10% decrease in foreign tourist spending			12.8	12,594	13.3	7.54
10% increase in investment cost			13.0	15,705	14.4	6.93
1-year delay in project implementation			15.1	48,712	207.8	0.48
<b>Muang Phang Access Road Improvement</b>	8,200	150,740				
Base Case			24.3	150,753		
10% decrease in tourists			22.7	140,679	149.6	0.67
10% decrease in foreign tourist spending			16.1	44,803	14.2	7.03
10% increase in investment cost			20.3	96,295	27.7	3.61
1-year delay in project implementation			22.2	135,523	99.0	1.01
<b>Dien Bien Phu Cultural Exchange and Tourist Information Center</b>	1,100	29,812				
Base Case			49.4	88,395		
10% decrease in tourists			45.9	87,396	447.1	0.22
10% decrease in foreign tourist spending			30.4	40,024	19.3	5.19
10% increase in investment cost			43.3	69,666	45.3	2.21
1-year delay in project implementation			39.2	79,853	93.7	1.07
<b>Phu Tu Environmental Improvement</b>	3,000	155,441				
Base Case			17.9	66,316		
10% decrease in tourists			16.6	55,800	63.1	1.59
10% decrease in foreign tourist spending			15.1	33,211	20.0	4.99
10% increase in investment cost			17.9	65,981	1,984	0.05
1-year delay in project implementation			16.5	53,878	53.3	1.88
<b>Ba Den Mountain Environmental Improvement</b>	7,500	121,576				
Base Case			32.1	169,888		
10% decrease in tourists			29.7	161,801	210.1	0.48
10% decrease in foreign tourist spending			24.1	98,633	23.8	4.19
10% increase in investment cost			28.5	137,627	52.7	1.90
1-year delay in project implementation			27.3	148,996	81.3	1.23
<b>Huong Tich Pagoda Environmental Improvement</b>	7,700	137,019				
Base Case			18.6	92,175		
10% decrease in tourists			17.6	83,061	101.1	0.99
10% decrease in foreign tourist spending			16.4	57,526	26.6	3.76
10% increase in investment cost			18.4	88,824	275.1	0.36
1-year delay in project implementation			18.1	86,807	171.1	0.58
<b>Nguyen Du Tourism Zone Environmental Improvement</b>	2,300	33,047				
Base Case			41.3	81,908		
10% decrease in tourists			38.4	79,700	370.9	0.27
10% decrease in foreign tourist spending			35.1	62,469	42.1	2.37
10% increase in investment cost			41.0	80,959	863.4	0.12
1-year delay in project implementation			34.4	74,169	105.4	0.94

D = Vietnamese dong, EIRR = economic internal rate of return, NPV = net present value, SI = sensitivity indicator, SV = switching value.

Source: Asian Development Bank estimates.