

ECONOMIC ANALYSIS

1. **Macroeconomic context.** Cambodia's service sector has largely been driven by tourism, which is a major earner of foreign exchange and an important source of income and employment for the country's formal and informal sectors. Large numbers of international tourist arrivals have supported the expansion of hotel and restaurant businesses, as well as businesses in other industries such as wholesale and retail trade, transport, and communications. Cambodia's travel and tourism industry is a vital engine of the country's economic growth. It directly contributes 11.5% to gross domestic product, generates tourism receipts equivalent to \$2.2 billion, and sustains 782,500 jobs (12.4% of total employment).¹ The sector has the potential to develop further, providing opportunities to increase foreign exchange earnings, diversify economic growth, and create new jobs, especially for the poor and women. On a global scale, it has proved to be a resilient industry, recovering quickly from crises and growing fast, particularly in Asia.

2. **Sector context.** International tourist arrivals reached 3.58 million in 2012, a 24% increase compared to 2011. About 60% of arrivals originate from Southeast and East Asia, with Viet Nam, the Republic of Korea, and the People's Republic of China as significant source markets. Since 2003 the number of hotels and guesthouses has more than doubled to 1,618, with 43,236 bedrooms. These establishments range from small family-owned enterprises to five-star internationally branded properties. Occupancy rates average about 70% nationally and 60% in project provinces. Gateway airports in Phnom Penh and Siem Reap are served by 23 airlines and receive about 24,000 inbound flights per year, with 4.3 million scheduled inbound seats. Cambodia offers tourist visa on arrival for citizens of 179 countries and visa exemptions for citizens of members of the Association of Southeast Asian Nations (ASEAN).

3. Although Cambodia possesses pristine beaches, a protected area network covering 24% of the country, and many cultural attractions, tourism is highly concentrated in Siem Reap and the temples of Angkor Wat, which account for 58% of international arrivals, more than one-third of hospitality investment, and 89% of travel agencies. Insufficient transport infrastructure and environmental services needed to catalyze growth and investment in new destinations is a major constraint. Although improving, low service standards prevent Cambodia from attracting tourists from higher spending markets, as illustrated by the nearly 50% difference between the average daily room rate (\$137) and average revenue per available room (\$68). This is exacerbated by weak institutional support for micro, small, and medium-sized enterprise development. Consequently, at least 40% of tourism receipts leave the country to purchase tourism-related imports, and only about 10% of destination spending reaches the poor.² These constraints need to be addressed to improve competitiveness and national returns from tourism. Authorities need to exert greater efforts to help diversify tourism products and services, and strengthen tourism cooperation with other countries in the Greater Mekong Subregion (GMS) and ASEAN. This will enable the tourism industry to fully tap into regional markets and to improve its competitiveness.

4. **Economic rationale for government intervention.** Tourism development depends on supporting public infrastructure to provide access to destinations and maintain tourist sites in good condition. Some of the investments required in project areas such as access roads, ferry and immigration terminals, or wastewater treatment facilities are too big for individual tourism

¹ World Travel and Tourism Council. 2013. *Travel and Tourism Economic Impact 2013: Cambodia*. London.

² J. Mitchell and C. Ashley. 2010. *Tourism and Poverty Reduction: Pathways to Prosperity*. London: Earthscan.

investors. These facilities are pure public goods with a low degree of excludability and subtractability.³ The market failure to produce these goods justifies public intervention. Moreover, the proposed infrastructure will not solely support tourism; it will be utilized by the local population to transport products to markets more efficiently and to improve sanitary conditions for residents. Developing these facilities will help catalyze additional private investment in tourism superstructure and local enterprises such retail services, food and craft production, and cultural and recreational services.⁴ The government is in the best position to address these market failures.

5. Economic analysis of subprojects. The economic analysis of the two infrastructure subprojects was undertaken based on preliminary designs and cost estimates, including the cost of capacity-building activities and interest on the Asian Development Bank (ADB) loan. The methodology adopted for the economic evaluation follows ADB's Guidelines for the Economic Analysis of Projects,⁵ ADB guidelines for economic analysis of tourism projects,⁶ and the approach of other ADB-financed tourism projects.⁷ The economic analysis compared the costs and benefits of the "with" and "without" project scenarios from 2014 to 2043. The economic viability of the subprojects was 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 were derived from financial cost estimates and segregated into tradeable and non-tradeable components. Based on conversion factors taken from recent ADB studies in Cambodia, the financial costs were converted to economic costs using a shadow exchange rate factor of 1.1 and a shadow wage rate factor for unskilled labor of 0.9.⁸ All costs and benefits are expressed in constant 2013 prices. Incremental operation and maintenance (O&M) costs have been 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 were selected. The economic benefits that were identified and quantified are tourism benefits for the Kampot pier and tourism loss-avoidance benefits for the Kep crab market. Economic benefits identified were subject to sensitivity analysis to test their robustness to various changes in assumptions. The sensitivity scenarios assumed (i) a 10% decrease in the expected number of international and domestic tourists that may arise from inadequate destination marketing or poor O&M practices, (ii) a 10% decrease in international tourist spending, (iii) a 10% increase in the investment cost, and (iv) a 1-year delay in project implementation due to slower than expected consultant recruitment and procurement. Subprojects are most sensitive to a reduction in tourism benefits, delays in project implementation, and poor O&M. These risks will be managed by providing resources to support marketing and promotion of project destinations, capacity building for O&M, and advance actions on consultant recruitment.

³ Excludability is the degree to which a potential user of a good or service can be excluded from using it. Subtractability is how much one user's consumption of a good or service subtracts from the ability of others to consume without raising production costs.

⁴ Tourism superstructure is all facilities that have been developed especially to respond to the demands of visitors.

⁵ ADB. 1997. *Guidelines for the Economic Analysis of Projects*. Manila.

⁶ ADB. 2007. ERD Technical Note Series No. 20: *Tourism for Pro-Poor and Sustainable Growth: Economic Analysis of Tourism Projects*. Manila.

⁷ 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.

⁸ ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia: GMS Southern Economic Corridor Towns Development Project*. Manila; ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia: Rural Energy Project*. Manila.

6. **Tourism benefits.** Project investments in access infrastructure, improved environmental services, capacity building, and destination marketing within and around the tourism sites will induce an incremental influx of international and domestic tourists and encourage them to stay longer. “With” project assumptions are (i) an incremental increase in annual tourist arrivals ranging from 1% to 7%, and (ii) an increase in length of stay by 0.5 days at both sites. Increased tourist arrivals and length of stay will generate more revenues from increased tourist spending and create tourism-related jobs. The tourism benefit gained is 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. Taking potential substitution effects into consideration, the analysis then assumes only 50% of the net tourist expenditure is the project-induced benefit arising directly from the subproject. Conservative assumptions for the number of tourist arrivals, average length of stay and spending, and projections under “with” and “without” project scenarios take into account historic trends, attractiveness of the subproject area, constraints on tourism development in the area, and the impact of the project on removing or releasing the constraints. Demand forecasts consider official statistics, visitor surveys undertaken during project preparation, and consultations with tourism industry stakeholders.⁹

7. **Tourism loss-avoidance benefits.** Since the beach is the main attraction of Kep, keeping the waters along the beach area clean and suitable for swimming and recreation is of paramount importance. If the discharge of raw sewage into the sea by restaurants in the crab market were allowed to continue, the entire beach would become degraded, making it unattractive and a health hazard to residents and tourists. If the pollution continues to worsen, tourists will avoid going to Kep, with the assumed reduction in forecast arrivals being 5% beginning in 2018 and steadily increasing to 20% annually in 2033. This will have a negative impact on the local economy, especially for residents that rely mainly on tourism for their livelihood. The analysis for Kep crab market environmental improvements conservatively assumes that 10% of the project-induced tourism benefit is the loss-avoidance benefit, beginning in 2018 when the new wastewater treatment facility begins operating.

8. **Benefits not quantified.** The economic benefits that were not quantified are (i) health benefits due to the difficulty of estimating the effects of intermittent sewage exposure on the health of local residents and tourists, (ii) willingness to pay for wastewater treatment fees, (iii) increased land values, and (iv) the passenger time savings of about 3.5 hours resulting from the new direct sea route between Kampot and Phu Quoc Island, Viet Nam.¹⁰

9. **Kampot pier development.** Kampot province is a gateway to Cambodia’s southern coastal corridor. It received nearly 980,000 tourists in 2012, of which about 25,000 were international. Establishment of a new international marine ferry terminal and pier with immigration facilities will open access between Cambodia and nearby Phu Quoc Island, Viet Nam. The proposed pier, ferry services, and local excursions will also provide opportunities for domestic and international tourists in Cambodia to explore nearby coastal destinations. This will draw more tourists to the area and encourage them to stay longer.

10. Due to strong demand for fast sea access to and from Phu Quoc Island, it is estimated the pier will service about 360,000 passengers upon its opening in 2018. Two types of tourists are expected to use the Kampot pier: (i) international (mostly Vietnamese) tourists coming from

⁹ Tourism Demand Analysis (accessible from the list of linked documents in Appendix 2).

¹⁰ The direct sea route between Kampot and Phu Quoc Island reduces travel time from 5 hours via the existing land and sea route, including land-border formalities, to 1.5 hours.

Phu Quoc Island who will visit Kampot to experience its unique charm and the nature of nearby Bokor National Park, and (ii) tourists (both international and domestic) coming from within Cambodia who will tour Kampot and use the pier for local excursions and as a gateway to visit Phu Quoc Island and/or other coastal destinations. The analysis assumes that about 30% of the international tourists in Kampot will go to Phu Quoc Island and then continue on to other places in Viet Nam, with the remaining 70% returning to Kampot by boat.¹¹ For tourists visiting Phu Quoc, the analysis assumes that about 5% will visit Kampot using the new ferry service. Phu Quoc has been experiencing rapid growth in tourist arrivals, with about 500,000 tourists visiting the island in 2013. In the “without” project scenario, the length of stay in the subproject area is assumed to remain the same as the current situation of 3 days for international tourists and 1 day for domestic tourists. Tourist spending is also assumed to remain at the current levels of \$45 per day for international tourists and \$15 per day for domestic tourists. In the “with” project scenario, the length of stay of both international and domestic tourists is expected to increase by half a day to 3.5 days for international tourists and to 1.5 days for domestic tourists. Average daily spending in the “with” project scenario is conservatively assumed to remain at \$45 per day for international tourists and \$15 per day for domestic tourists. The base case EIRR is 23.6%. The sensitivity analysis shows that the project remains economically viable for all adverse variations, with EIRRs ranging from 22.2% to 19.4%.

11. **Kep crab market environmental improvements.** Kep welcomed nearly 800,000 tourists in 2012, of which around 39,000 were international tourists. Average annual growth in domestic tourist arrivals from 2007 to 2012 was 49.0%, but growth dropped to 1.3% in 2012 due to increasingly unsanitary conditions arising from inadequate solid waste collection and restaurants discharging raw sewage directly into the sea and close to the beach frequented by tourists. In response, the subproject will install anaerobic baffled reactor tanks with the capacity to treat 500 cubic meters of wastewater per day, connect the anaerobic baffled reactor tanks to all crab market businesses, construct additional public toilet blocks, and upgrade drainage at the market. Currently, on average international tourists in Kep stay 3 days and spend \$70 per day, while domestic tourists stay for 1 day and spend \$45 per day. In the “without” project scenario, it was assumed that this situation will remain the same. In the “with” project scenario, the length of stay was assumed to increase by 0.5 days to 3.5 days for international tourists and 1.5 days for domestic tourists, with average daily spending remaining at existing levels. Loss-avoidance benefits were computed based on these assumptions. The base case EIRR is 15.2%. The sensitivity analysis shows that the subproject remains economically viable for all adverse variations, with EIRRs ranging from 15.1% to 12.9%. The summary results of the analyses and sensitivity tests are in the table below.

Summary Indicators

Subproject and Scenario	Population	Economic Cost (KR million)	EIRR (%)	NPV (KR million)	SV	SI
1 Kampot Pier Development	12,000	45,545				
Base case			23.6	46,978		
10% increase in investment			22.1	43,864	150.9	0.7
10% decrease in tourists			19.4	29,208	26.4	3.8
10% decrease in international tourist spending			22.2	40,550	73.1	1.4
1-year delay in project implementation			21.5	41,797	90.7	1.1
2 Kep Crab Market Environmental Improvements	12,700	6,341				
Base case			15.2	2,295		
10% increase in investment			14.4	1,821	48.4	2.0

¹¹ Phu Quoc Island was recently established as a special economic zone with visa exemption for tourists.

10% decrease in tourists	12.9	633	13.8	7.2
10% decrease in international tourist spending	13.6	1,106	19.3	5.1
1-year delay in project implementation	15.1	2,230	355.1	0.2

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

Source: Asian Development Bank estimates.