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Tourism for pro-poor and sustainable growth: economic analysis of tourism projects

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About the Paper

Tun Lin and Franklin D. De Guzman introduce a simple analytical framework that would underpin the systematic economic analysis of tourism projects. Given the increasing importance of tourism in economic development and the rise of "pro-poor" tourism development strategies, this framework would help address theoretical and practical challenges in the economic analysis of tourism projects.

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Asian Development Bank

TOURISM FOR PRO-POOR AND SUSTAINABLE GROWTH: ECONOMIC ANALYSIS OF TOURISM PROJECTS

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FOREWORD

The ERD Technical Note Series deals with conceptual, analytical, or methodological issues relating to project/program economic analysis or statistical analysis. Papers in the Series are meant to enhance analytical rigor and quality in project/program preparation and economic evaluation, and improve statistical data and development indicators. ERD Technical Notes are prepared mainly, but not exclusively, by staff of the Economics and Research Department, their consultants, or resource persons primarily for internal use, but may be made available to interested external parties.

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ABSTRACT

Despite the increasing importance of tourism in economic development and the rise of ''pro-poor'' tourism development strategies, properly designing and implementing tourism projects remain generally a difficult process. There are both theoretical and practical challenges in justifying public sector investments in tourism and properly measuring the projects' benefits and sustainability. There is a need to come up with an analytical framework that would address these challenges and help evaluate a tourism project's economic viability. This technical note introduces a simple framework that could underpin the systematic economic analysis of tourism projects.

I. INTRODUCTION

Tourism is one of the world's fastest growing industries (Mowforth and Munt 1998, Goodwin 2000), and an integral part of economic development strategies in developing nations since the 1960s. According to the World Tourism Organization (WTO), tourism contributes over 2% of gross domestic product (GDP) and 5% of exports to the economies of 11 of the 12 developing countries that are home to 80% of the world's poor (WTO 1998 in Ashley et al. 2000). The industry's potential to generate foreign exchange earnings, attract international investment, increase tax revenues, and create new jobs has served as incentive for developing countries to promote tourism as an engine of growth.

In recent years, tourism's role in poverty alleviation has been slowly recognized among development agencies. "Pro-poor" tourism development strategies are geared toward generating net benefits for the poor. However, properly designing and implementing tourism projects remain generally a difficult process. There are both theoretical and practical challenges in justifying public sector investments in tourism and properly measuring the projects' benefits and sustainability. There is a need to come up with an analytical framework that would address these challenges and help evaluate a tourism project's outcomes. This technical note introduces a simple framework that would underpin the systematic economic analysis of tourism projects.

The structure of this paper is as follows. The rest of this section introduces the rise of pro-poor tourism in recent years and the Asian Development Bank's (ADB) tourism projects. Section II proposes an analytical framework for economic analysis of tourism projects. Sections III to VI detail each step of the proposed framework. Section III establishes the economic rationale of tourism projects and Section IV discusses demand analysis using tourist profile and expenditure data. Section V outlines two alternative approaches to estimating tourism benefits. Section VI looks at distribution and sustainability issues. Section VII illustrates how these approaches could be put into practice using the Sambor Prey Kuk Cultural Tourism Development Project in Cambodia as an example. Finally, Section VIII provides the conclusions.

A.   The Rise of Pro-Poor Tourism

Asia has become the fastest growing tourism market in the world for the past century (WTO 2006). Worldwide, the number of international arrivals shows a huge increase from 25 million in 1950 to an estimated 763 million in 2004, corresponding to an average annual growth rate of 6.5%. During the same period, the number of international arrivals in Asia and the Pacific region grew from 0.2 million to 153 million. This corresponds to an average annual growth rate of 13%, exceeding that of the Middle East (10%), Europe (6%), and Americas (5%). International tourism receipts in 2003 represented approximately 6% of worldwide exports of goods and services and nearly 30% of service exports (WTO 2006). In Asia and the Pacific region, international tourism receipts increased from $40 million in 1950 to $125 billion in 2004. People's Republic of China (PRC), Malaysia, Thailand, Japan, Republic of Korea (henceforth Korea), Indonesia, and India are the major tourism destinations in Asia (Figure 1).

Figure 1
Top Asian Tourism Market by International Tourist Arrivals and Tourism Receipts, 2004
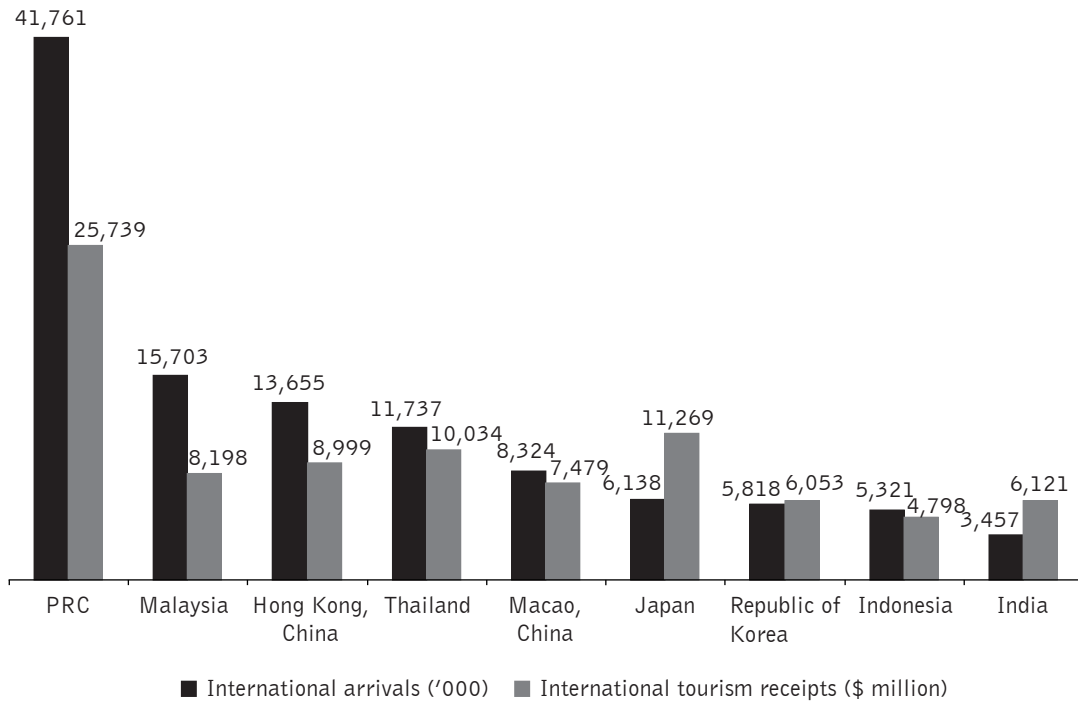
Source: World Tourism Organization (2006).

Asia's tourism sector still has considerable room for growth for two reasons. First, the continent is endowed with a rich cultural and natural heritage that is currently not fully exploited (Harrison 1992). Taking the United Nations Educational, Scientific and Cultural Organization designated world heritage sites as an indicator of tourism resource endowments, Europe and North America emerge with 436 sites (out of the world total of 830 sites) and an annual international tourist arrival of 509 million. In comparison, Asia has 167 world heritage sites and an annual international tourist arrival of 153 million. In terms of tourist arrivals per site, Asia is still lagging behind Europe and North America by nearly 20%. Second, with its vast population and increasing income, Asia will have an increasing number of domestic tourists.

For a long time, tourism in developing countries has been described by some scholars as an exploitative form of "neocolonialism" (Britton 1981, Brohman 1996) or "leisure imperialism (Crick 1989), which suggests that tourism perpetuates poverty in third world countries. Unmanaged tourism development in developing countries has been criticized for its drawbacks (Table 1). In recent years, tourism's role in poverty alleviation has been slowly recognized by academics and international development agencies. Tourism is increasingly being included in national poverty reduction strategies (Ashley et al. 2000, Shah 2000). The rise of new "pro-poor" tourism development strategies explicitly seeks to maximize tourism benefits to the poor while simultaneously reducing its negative impacts. Proponents argue that pro-poor tourism is potentially more conducive to

poverty elimination than other economic sectors (DFID 1999, Ashley et al. 2000 and 2001b, Roe and Urquhart Khanya 2001).

While the concept of pro-poor tourism is relatively new, the idea of an approach to providing opportunities for the poor is sound. Tourism is pro-poor if it provides: (i) economic gain; (ii) employment; (iii) opportunities for small and medium-size enterprises (SME); (iv) infrastructure such as improved access to potable water, communications, roads (access to markets), and improved health and education services; (v) protection of natural and cultural resources; and (vi) opportunities and capacity for the poor to improve their livelihoods (ADB 2005).

Economic gain for the poor is generated since tourism brings the consumers to the natural resources and cultural heritage sites. These areas are usually occupied by poor communities. This gives the poor access to markets in which to sell their goods and services. Tourism also has the potential to generate pro-poor employment because it is a highly labor-intensive industry. The industry usually does not require high levels of skill and is thus able to create employment relatively quickly. It could also generate incomes because its investment cycle is shorter than some other industries—it only requires packaging of existing attractions and services, filling out missing components, and introducing proper management practices (ADB 2005). It also appears to offer more job and income-earning opportunities to women than do other sectors (Hemmati 1999).

Opportunities for SMEs arise because tourism development requires substantial inputs from financial services, building materials, construction, transportation, telecommunications, agriculture, food processing, arts and crafts, and other sectors of local economies. Well-planned tourism makes a powerful contribution to the formation and strengthening of linkages with other sectors of the economy and, in the process, stimulates the creation and expansion of micro enterprises and SMEs at the local level, and helps to generate supplementary cash income opportunities for women and other disadvantaged groups (ADB 2005).

In addition to employment and business opportunities, tourism development often brings with it improved infrastructure, security, communications, community development, and bolstered local pride (Roe et al. 2002). Health and education services for the poor can also be improved since government revenues generated by tourism activities may subsequently be invested in these services, as suggested by Goodwin (2000).

Tourism—particularly nature-oriented or culturally oriented tourism—often depends on the assets or natural capital of the poor (Roe and Urquhart Khanya 2001). Thus, tourism development that incorporates the protection of natural and cultural resources is pro-poor because it takes care of such assets. Moreover, this ownership by the local people of unique tourism resources provides them with opportunities to leverage their assets to obtain equity in joint venture partnerships, as well as to extract value and decision-making power.

Table 1 shows the stark differences between unmanaged tourism and sustainable and pro-poor tourism.

TABLE 1
UNMANAGED TOURISM DEVELOPMENT VS. SUSTAINABLE AND PRO-POOR TOURISM DEVELOPMENT

UNMANAGED TOURISM DEVELOPMENT	SUSTAINABLE AND PRO-POOR TOURISM DEVELOPMENT
• Concentrated in a handful of destinations • Weak backward linkages with other sectors (especially agriculture) in the economy and low capability to generate local income and jobs • Erodes the value of important natural and cultural heritage assets • Causes the loss of urban environmental amenity • Contributes to undesirable social impacts including exploitation of vulnerable groups notably women, children, and ethnic minorities	• Brings the consumers to places where the poor reside • Strong backward linkages with other sectors and good capability to generate local jobs and income • Improved management of natural resources or cultural assets owned by the poor • Strengthens the vulnerable group's decision-making power through their ownership of unique tourism resources • Improved infrastructure, security, communications, community development, and local pride • Indirectly finances health and education through improved government revenues

As DFID (1999) explains, the potential of tourism in contributing to poverty alleviation is compelling for the following reasons:

(i)   Tourism is a massive and growing industry already affecting millions of poor, so a marginal improvement could generate substantial benefits.

(ii)   Tourism has pro-poor growth advantages over other sectors in relation to poverty elimination.

(iii)   Although the poorest may not benefit directly, the costs they face can be reduced. Benefits can be expanded for the fairly poor such as street vendors, and casual and unskilled workers and artisans, which may also indirectly benefit their poorer relatives and neighbors.

(iv)   Considerable progress in placing environmental issues on the tourism agenda shows that concerted action can make a difference.

(v)   The limited evidence available suggests that a range of strategies can be used to develop pro-poor tourism. Little is being done in practice and so much remains to be done.

B.   ADB Tourism Projects

To date, the Asian Development Bank (ADB) has approved 22 technical assistance grants (nine of which are regional technical assistance projects or RETAs) totaling about US$8.8 million; and five loans (for three investment projects) amounting to US$62.6 million to support tourism development (Appendix 1). The first investment project, NEP: Tourism Infrastructure Development, consisted of a package of modest but strategic components to enhance private sector activity by providing tourism-related infrastructure and integrating the tourism sector and the local economy through community participation, training, and environmental improvements. The succeeding project, NEP: 2nd Tourism Infrastructure Development Project, was designed to blend critically needed infrastructure improvements with extension of ecotourism development and environmental protection of key tourist destinations. The third project, GMS: Mekong Tourism Development Project, targeted to improve high-priority, tourism-related infrastructure in the lower Mekong basin;
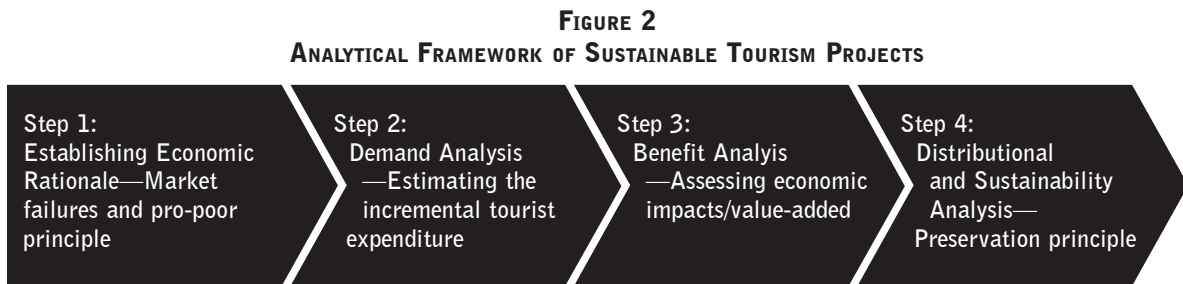
promote pro-poor, community-based sustainable tourism in rural areas; and strengthen subregional cooperation. ADB has helped the six Greater Mekong Subregion (GMS) countries and the South Asia Sub-regional Economic Cooperation (SASEC) countries pool their unique ethnic, cultural, and natural attractions for maximum mutual benefits. It has provided technical assistance for capacity building and skills development, master plans, tourism planning, and fora.

ADB's Medium Term Strategy II aims to promote operations that are geared toward productivity-enhancing activities and employment-intensive rural development. Tourism projects and related activities that promote inclusive growth could have important roles to play.

II. AN ANALYTICAL FRAMEWORK AND THEORETICAL AND PRACTICAL CHALLENGES

A.   An Analytical Framework for Economic Analysis of Tourism Projects

This section proposes a simple analytical framework for the economic analysis of tourism projects. It involves four steps as shown in Figure 2. Each step is discussed in detail in Sections IV to VII.

FIGURE 2
ANALYTICAL FRAMEWORK OF SUSTAINABLE TOURISM PROJECTS

| Step 1: Establishing Economic Rationale—Market failures and pro-poor principle | Step 2: Demand Analysis —Estimating the incremental tourist expenditure | Step 3: Benefit Analyis —Assessing economic impacts/value-added | Step 4: Distributional and Sustainability Analysis— Preservation principle |

Step 1: Establishing Economic Rationale for Public Investment

The economic rationale for public investment needs to be carefully established. Depending on the type of tourism projects under investigation, different arguments about market failure and pro-poor growth initiatives can be put forward. In infrastructure-type projects such as road construction, waste treatment, and border facilitation, arguments typically lie in the public goods nature of the projects. In the preservation of natural and cultural heritage types of projects, the missing markets for these sites as well as the missing markets for tourism revenue across generations might arise and call for public intervention. Sometimes, projects are proposed to demonstrate good practices and sustainable models for tourism development. The arguments lie in the positive information externalities generated through the process. The details of each of these arguments are discussed in Section IV.

Step 2: Demand Analysis: Estimating the Incremental Tourist Expenditure

Tourism brings benefits in many ways, but mostly from tourists' spending. Quantifying tourism benefits starts with a good *demand analysis*: how many tourists, where they come from, how long they will stay, and how much they will spend. A "with-the-project" and "without-the-project" analysis can find out the incremental tourists' spending created by the project. The details of demand analysis are discussed in Section V.

Step 3: Benefit Analysis: Using the Multiplier Approach to Assess Tourism Impacts

Most studies use the multiplier approach to assess the economic impacts of tourism instead of using conventional cost–benefit analysis. The "multiplier approach" tracks incremental tourist spending in the economy and estimates gross domestic product (GDP), income, and employment created while the money circulates within the economy before it "leaks" out. A small guest house in a remote province will have less leakage compared to a big international chain hotel whose supplies mostly come from outside of the country. The *income multiplier based on direct and indirect impacts of tourism* is then applied to incremental tourist spending to derive the economic benefits of the project. The benefits then can be compared against the costs of the concerned project(s). The details of impact assessment are discussed in Section VI.

Step 4: Distributional and Sustainability Analysis—Preservation Principle

Distributional analysis of pro-poor tourism projects has to show evidence that a significant portion of tourist expenditure will be spent outside the big chain hotels and airlines, and the poor and the vulnerable will actually have a share in the tourism benefits.

Standard institutional and financial sustainability analyses need to be conducted to ensure there are sufficient institutional and financial resources to maintain the flow of project benefits. When a government subsidy is involved, the fiscal impact of the project should be considered. The project's proceedings (ticket sales for example in the tourism site) need to sustain the operational and maintenance costs of the project.

In addition to the institutional and financial sustainability analyses, the project has to ensure that resources are adequate to preserve these tourists and heritage sites. Let us call this "preservation principle" to be further discussed in Section VII.

The above analytical framework is proposed as a practical approach to assess economic viability of a tourism project. However, a number of theoretical and practical challenges have to be noted in analyzing the tourism sector.

B.   Theoretical Challenges

1.   Missing Market: Pricing Natural and Cultural Heritage

From the economic point of view, how much to preserve these natural and cultural heritage assets today depends on how much the future generations will value their existence. However, due to the missing market across generations, a problem that economists refer to as "dynamic externalities—attaching shadow prices for these assets is extremely difficult, if possible at all. Future generations would not be able to "trade" with the current generation for these assets, so economic theories provide little guidance on how much preservation efforts are needed today (underexploitation is equally uneconomic as overexploitation). Intergenerational trade-off is the first type of trade-off to be considered for heritage preservation. Tourism can either accelerate or decelerate the rate of decay of these assets, depending on the balance between the additional preservation funds made available and the additional pressure put forward by tourism.

2.   Missing Market: Development and Preservation

The second trade-off is development benefits versus preservation value. Natural and cultural heritage can be seen as consumption goods in themselves (which people derive value from their existence) as well as investment goods (from which people derive future economic benefits). If one takes the latter perspective, trade-offs have to be made between the present's tourism development benefits and the future's tourism development benefits. The future's tourism benefits are derived from today's preservation efforts. Economic theory indicates that one makes trade-offs between current income from tourism-induced economic development and future income flow from preservation. However, when facing enormous development and population pressure today, people might not choose the optimal depleting rate of tourism resources. The problem of myopia (very large discount rate for future income) may take place if local residents or governments have short time horizons.

3.   Coordination Problem and Tragedy of Commons

Coordination problems may lead to the underexploitation of tourism resources. The tourism industry consists of a whole range of interrelated enterprises wherein the success of an enterprise's own decision will depend upon the decision and action of others. For example, excessive competition among related enterprises may lead to duplication of efforts and resources, leading to falling service quality. The "tragedy of the commons" problem leads to overexploitation of tourism resources when property rights are weak or missing. Communal property ownership is environmentally degrading and results in the "tragedy of the commons" because individual users exploit common property rather than consider its long-term sustainability. The use of national parks and cultural heritage sites are usually open to all. However, commercialization and increasing population steadily erode the values that visitors seek in these places. For example, most tourists that traditionally travel in large batches can bring destruction to an environment that most likely can sustain only a certain number of people. In this sense, many individuals, acting independently and in what they perceive to be their own interests, destroy a collective good.

C.   Practical Challenges

1.   Defining "Tourist"

There are a variety of definitions for tourists. Studies are not comparable to each other unless they use the same definition for tourist. The first step of tourism analysis therefore would be to carefully examine who the tourists are. Are they business travelers, pleasure travelers, or both? Are they international travelers, out-of-area domestic travelers, and/or within-the area domestic travelers? Are people who come to the tourist area to visit friends and relatives included?

2.   Defining "Tourism Sector"

Another challenge is that the tourism industry usually is not defined separately in a country's industrial classification system. For example, the Standard Industrial Classification (SIC) system does not have a separate tourism sector. Instead, tourism is generally embedded in a number of different industry sectors, and each sector has both tourist sales and nontourist sales. In the SIC system, tourism-directly-related sectors include "eating and drinking" (SIC 58); "hotel and lodging" (SIC 79); "amusements and recreation services" (SIC 79); some of "retail" (SIC53, 54, 59); and "transportation" (SIC 41, 42, 44, 49 etc). In each of these sectors, there are both tourist and nontourist sales. Therefore, disaggregation of the sectors into sales attributed to tourism and sales attributed to nontourism is necessary.

3.   Tourism Data

In developing countries, consistent and accurate data on the tourism industry are scarce. This lack of information is perhaps one of the industry's greatest barriers to reaching its potential. In fact, in these countries, collecting primary data for the tourism sector is vital to the development and implementation of a comprehensive and strategic marketing and public investment plan. The public/private decision makers need information on the characteristics of the tourism market to make quality marketing and investment decisions.

III. ESTABLISHING PROJECT RATIONALE FOR PUBLIC SECTOR INTERVENTION — MARKET FAILURE ARGUMENTS AND PRO-POOR PRINCIPLE

There is generally limited direct support to tourism by the public sector since it is basically perceived as a private sector activity. However, there has been a rethinking on the public sector's role and how it could effectively support the private sector for it to be able to take advantage of the potentials of tourism. The public sector can support and promote the effective involvement of the private sector in tourism by providing basic infrastructure facilities, developing human resources for tourism, increasing the capacity of public sector institutions to interact better with the private sector, and improving the linkages of tourism activities with other sectors. In particular, the government has dual roles to play in tourism development. The public sector develops and rehabilitates infrastructure to spur tourism while at the same time protects the environment and cultural/natural heritage sites.

A.   Building Infrastructure—Coordination Failure and Public Goods

The participation of the private sector in tourism planning, investment and development, promotion, remains beset with a number of obstacles such as weak infrastructure, economies of scale, and high promotion and information costs, among other things. Thus, the public sector role in tourism development generally consists of setting up the infrastructure foundation (e.g., road construction, waste treatment, border facilitation) and providing the regulatory framework within which the private sector can operate.

A government targets its involvement by minimizing physical constraints and infrastructure bottlenecks (e.g., improving surface/air transport) that hamper tourism development and the movement of tourists across tourism sites.

Natural and cultural heritage assets that are of importance for tourism are threatened by inappropriate use. The quality standards and standards of hygiene could be low, especially among small-scale ancillary enterprises in the more remote tourism sites, making it difficult to attract more tourists to these areas. Government could assist in improving the environment—a public good, or a collective good—that would not be provided by individuals or private sectors without coordination.

A similar argument applies for efforts to collectively promote tourism destinations through chambers of commerce, group advertisement, national image building, etc. The public sector can play an important role in these activities.

Government could also try to minimize institutional constraints such as visa procedures, repatriation of foreign investment proceeds, etc. At the same time, it implements measures aimed at encouraging private sector participation in other areas including investment, marketing, and technical training. This is done by providing the regulatory framework such as approval of accommodation establishments, issuance of licenses to travel and other adventure-related activities, and promotion of tourism in and outside the country.

B.   Preserving Natural and Cultural Heritage

Natural and cultural heritage resources are the primary resources upon which tourism depends, now and in the future. These include not only the important natural and cultural sites but also the intangible cultural heritage as represented by the unique customs, traditions, and arts and crafts especially of ethnic minorities living in the vicinity of these sites. Investments are needed for access and protection of infrastructure in natural, cultural, and urban sites to strengthen the sustainable management of tourism. Investments in improved heritage management practices; a more inclusive approach to tourism development to accelerate poverty reduction and reduce undesirable social impacts; and enhanced quality of services and investments in the ancillary sector are also needed.

C.   Demonstrating Good Practices and Sustainable Models—Information Externality

The public sector is also involved in providing demonstration models to promote and manage sustainable tourism at heritage and urban sites. A demonstration model shows the approach that

should be taken in developing pro-poor tourism initiatives in pilot studies. The model aims to: (i) increase substantially the volume of poverty reduction generated through tourism; (ii) help secure and conserve key cultural and natural tourism assets through alternative livelihood development; (iii) ensure that women and ethnic minorities are given equitable opportunities to participate in and benefit from tourism economy; and (iv) provide a body of knowledge and experience on poverty reduction through tourism that can be replicated elsewhere.

IV. DEMAND ANALYSIS: TOURIST PROFILE AND EXPENDITURES

Typically, the demand analysis begins with a tourist/visitor profile. The profile can be obtained through government or industry records or, most commonly, through a visitor survey. The survey asks questions like who the tourists are, where they come from, what they do in the region, etc.

Forecasting tourism demand is essential to the tourism project analysis. Unrecoverable losses due to high vacancy rates will result if demand forecasts are unduly optimistic, and vice versa (Uysal and Crompton 1985 in Calatone, et. al. 1987). Tourism demand is typically measured by the arrival and expenditure of tourists by areas of origin and destination, types of attraction and accommodation, length of stay, modes of transportation, and kinds of promotion, etc.

Tourism forecasts may be generated by either qualitative or quantitative approaches. The main focus of qualitative approach is the Delphi method (Linstone and Turoff 1975, Rowe and Wright 1993, Weaver 1972, Woudenberg 1991), which uses a series of iterative survey questionnaires to generate a general consensus among a group of experts.

Quantitative methods that have been applied to tourism demand include econometric and time series models. Econometric models estimate the causal relationship between tourism demand and its determinants using regressions to fit a linear or log-linear model with a set of explanatory variables. Major explanatory variables usually include exchange rates, income in the country of origin, and relative price levels etc. This methodology has the advantage of simplicity, but it also has several serious limitations including model misspecification, different error distribution, and data availability. Moreover, some have doubted the general validity of estimating a specified demand model in terms of ex post explanatory variables, as it relies on the assumption that the explanatory variables will determine the tourism demand in the future, in the same pattern, trend and magnitude as in the past.

On the other hand, the time series forecasting models extrapolate historical trends of tourism demand into the future without considering the underlining causes on trends. Typical time-series methods include constant growth, exponential smoothing, univariate Box-Jenkins, autoregression, moving averages, and decomposition. Spatial models have also been used in tourism forecasting (Petropoulos et. al. 2005, Witt and Witt 1995). Compared to the econometric models, these models have less data requirements, but they are not based on any theory that underlies tourist's decision making process.

For the purpose of project evaluation, changes of tourist arrival and profile need to be estimated under both "with" and "without-the-project" scenarios. This is difficult as it heavily relies on counterfactual assumptions on the marketing and sales of various subsectors of tourism. A careful analysis is needed to evaluate the historical trends of tourist profiles as well as the site's carrying capacity. In many cases, it is assumed that, under the "without-the-project" scenario,

tourist arrivals will continue its historical trends until reaching the site's existing capacity, while tourist arrivals increase under the "with" project scenario. The incremental tourist arrivals, as well as their expenditures, are attributed to the project.

Based on the estimated tourism profiles and arrivals, incremental tourist expenditures are calculated, where "incremental" means the difference in total tourists' expenditures between "with" and "without-the-project" scenarios. The calculation of total tourist expenditures takes one of two approaches: demand-related (expenditures reported by tourists) or supply-related (receipts received by businesses from tourists).

$$\text{incremental tourist expenditure} = \text{tourist expenditure}_{\text{with the project}} - \text{tourist expenditure}_{\text{without the project}} \quad (1)$$

For the demand-related approach of estimating expenditure, tourists are categorized by type such as day travelers, campers, overnight hotel guests, etc. The average expenditures and the number of tourists of each type are estimated. Total tourist expenditures are derived by multiplying the number of tourists with the average expenditures by type and summing over the types.

$$\text{total tourist expenditures} = \sum_{i=1}^{n} (\text{no. of tourist of type}_i)(\text{average expenditures per visit}_i) \quad (2)$$

where i=tourist types

Typically, such a demand-related approach relies on constructing tourist profiles through tourist registration records or tourist surveys. Various models have been developed to standardize the procedures for constructing tourist profiles and examining different types of tourists and their expenditure patterns. One example is the Travel Economic Impact Model (TEIM) model used by the US Travel Data Center to estimate tourist expenditures. However, the difficulty mostly lies in the data. Tourist numbers estimated from airport arrivals, welcome center registration, park-gate interviews, and traveler surveys can be inconsistent across places and subject to errors. Especially for some tourist types such as day travelers and local visitors, registration records are usually neither well kept nor consistent across places.

For the supply-related approach (receipts received) to calculate tourists' expenditures, industry groups that serve tourists (lodging, eating and drinking, recreation etc.) have to be identified along with the average sales to tourists by each industry group. Tourist expenditure is estimated by multiplying the numbers of businesses within a group by average sales to tourists and summing over groups.

$$\text{tourist expenditure} = \sum_{i=1}^{\text{industry groups}} (\text{no. of firms in group}_i)(\text{average sales to tourists}_i) \quad (3)$$

where i=industry groups

One of the advantages of the receipts received approach is that it is usually easier to gather information from businesses that are in the study area and that usually keep business records. A shortcoming with this approach is the percentage of goods and services in these industry sectors sold to tourists is difficult to estimate and often subject to substantial errors. It is easier for some

sectors such as lodging to estimate percentage of sales from tourists than for other sectors such as eating and drinking or retail sectors.

There are also many studies that combine supply-related and demand-related approaches to derive tourist numbers and subsequently expenditures. For example, Longwoods International Inc. in their tourism study used a supply-related model named TRAITS II (Tourism Analysis and Information Tracking System) to calculate total hotel/motel/resort and camping rental revenues. A demand-related travel spending behavior model was used to project total tourists' expenditures by category. Using the estimated tourists' expenditures by category and the hotel/motel/resort revenue information, the studies were able to estimate the number of tourists and their total expenditures.

There are two advantages of combining demand-related and supply-related approaches to estimate number of tourists and their expenditure. First, supply-related approaches, which usually include conducting a lodging survey, can estimate reasonably accurate lodging business revenues from tourists because presumably the lodging sector keeps good occupancy records. Second, demand-related approaches, which usually include conducting a tourist survey, can estimate reasonably accurate tourist expenditures by category. Combining lodging revenue and the percentage of tourist expenditure on lodging, one is able to estimate total tourist expenditure.

There is one last point to be noted—demand analysis is based on certain assumptions about the ''substitution effect.'' It is very important to consider, when visitors incur additional spending in the tourism sites either by staying longer or spending more per unit of time, whether or not this spending ''crowds out'' their spending elsewhere. If the answer is yes, the substitution effects need to be considered. In this regard, it is usually helpful to separate domestic visitors from foreign visitors when conducting the demand analysis. It is obviously easier to ignore the ''substitution effects'' of foreign visitors' spending, which might take place at their home country, than to ignore the ''substitution effects'' of domestic visitors' spending, which could have taken place somewhere else within the concerned economy. As a matter of fact, the substitution effects of domestic visitors' spending could be substantial (as much as 100%) depending on, without tourism, how much of domestic visitors' money would have been spent abroad by importing foreign goods and services. Otherwise, if the money would have been spent entirely within the economy, tourism does not generate real ''incremental'' spending. This is the reason that in many national tourism impact studies, only foreign visitors' spending is used for calculating the economic impacts. Domestic visitors' spending yields impacts only when at least one of the two following conditions is fulfilled:

(i)   without the project, (some of) domestic visitors' spending would have been spent on importing foreign goods and/or services

(ii) the tourism sector has ''greater linkages'' when the tourism sector buys a greater share of its inputs from domestic sectors (larger ''multiplier'')

This will be further illustrated in Section VI using a real world example.

V. ESTIMATING TOURISM BENEFITS: TWO ALTERNATIVES

A.   Estimating Benefits: Economic Impact Analysis versus Cost–Benefit Analysis

Different approaches have been applied to estimate the economic benefits of the tourism industry. Two most commonly used approaches are (i) economic impact analysis based on multipliers, and (ii) cost–benefit analysis based on evaluation of nonmarket goods. These two approaches focus on different aspects, which need to be clearly understood.

An economic impact analysis based on multipliers traces the flows of spending associated with tourism activity in a region to identify changes in sales, tax revenues, income, and jobs due to tourism. The principal methods here are visitor spending surveys, analysis of secondary data from government economic statistics, input–output models, and multipliers (Frechtling 1994). Multipliers are the impacts generated in a tourist's destination for every dollar that is spent on the tourism activity (Tooman 1997). Multiplier analysis is a tool to estimate indirect impacts from direct impacts. Generally, multipliers are derived from the total impact of changing one variable on other related variables in an economy (Tanjuakio, Hasting, and Tytus 1996). Depending on the variables under consideration, one can estimate output multipliers, employment multipliers, income multipliers, and so forth.

There are different techniques to estimate multipliers such as standard multiplier analysis, econometric analysis, input–output analysis, social accounting matrix (SAM) analysis, and computable general equilibrium model (CGE). Each is discussed in the following sections.

A cost–benefit analysis based on valuing nonmarket goods and services estimates the relative economic efficiency of alternative policies by comparing benefits and costs over time from the perspective of societal welfare. Many tourism assets are nonmarket goods (e.g., national parks, wetland conservation, etc.) and the demand and value of these nonmarket goods arise from both actual use and nonuse of these goods. Benefits are derived from direct use of the resource such as recreational experience from visiting a park, hunting, fishing, boating, camping, or enjoying a panoramic view. These are measured by the consumer's surplus in the Hicksian sense. The questions asked are (i) "how much would recipients be willing to pay to gain access to the recreational resources under consideration?" or (ii) "how much would they be willing to be paid to abstain from the opportunity?" Nonuse benefits arise not from present use but from the option of future use or knowledge of continued existence of the resource. This is also referred to as preservation value. It has various forms including option, existence, and bequest value.

Cost and benefit analysis makes use of a wide range of methods for estimating values of nonmarket goods and services, such as direct market pricing, surrogate market pricing, cost-analysis, travel cost method, contingent valuation, conjoint choice experiment, hedonic pricing, etc. The travel cost method, for example, estimates consumer's surplus based on their varying travel costs. Contingent valuation involves direct questioning of respondents and obtaining their willingness-to-pay or willingness-to-accept data (Stokey and Zeckhauser 1978, Sudgen and Williams 1978, Pabuayon 1991).

These two approaches (economic impact analyses based on multipliers, and cost–benefit analysis based on evaluating nonmarket goods) are frequently confused since both discuss economic "benefits." There are two clear distinctions between the two approaches in that they measure different things with different perspectives:

(i) *What Benefits?* The cost–benefit analysis includes market and nonmarket values (consumer surplus), while economic impact analysis is restricted to actual flows of money from market transactions. In the cost–benefit analysis framework, all nonmarket benefits (e.g., the existence value or bequest value) and social costs (e.g., increased trafficking in women and children, child labor, increased HIV prevalence due to increasing tourist numbers etc.) need to be quantified. In the economic impact analysis, only market benefits and costs are considered and nonmarket benefits and social costs need to be discussed separately.

(ii) *Whose Benefits?* The economic impact analysis based on multipliers focuses on the regional distribution of economic activity. The income received from tourism by a destination region is largely offset by corresponding losses in the origin regions, yielding only modest contributions to net social welfare and efficiency. However, the cost–benefit analysis addresses the welfare changes of all the beneficiaries, including foreign visitors and future generations.

In this paper, economic impact analysis is introduced based on multipliers for three reasons. First and most importantly, usually ADB public investment projects take a national perspective, comparing project economic benefits with costs at the national level. A developing country's investment on tourism sites should not be justified based on the welfare changes (travel costs or willingness-to-pay for example) of visitors, because many of the visitors are from abroad. As a matter of fact, the investment should be questioned if its benefits mainly accrue to foreign visitors, which is exactly one of the reasons that tourism in developing countries has been conceptualized as an exploitative form of "neocolonialism" or "leisure imperialism." Second, economic impact analysis based on multipliers has been used throughout previous ADB tourism projects and therefore, the approach deserves some careful examination.

Before proceeding to discuss economic impact analysis based on multipliers, the approach's limitations need to be noted. First, it needs to be understood that the "benefits" derived from the multiplier analysis are the changes in economic activities (gross domestic product, jobs etc.) within a geographic region rather than changes in consumer surplus or welfare. As earlier stressed, income received from tourism by a destination region is largely offset by corresponding losses in the origin regions. Hence, the economic benefits measured by this approach are *not* welfare changes. Second, multiplier estimates are heavily influenced by the size of the study area. Generally, the larger the study area, the higher the multiplier. Third, unlike life-cycle analysis for example, most multiplier techniques provide static state analyses only. Approaches like life-cycle analysis analyze the differential impacts of evolutionary stages of tourism development stages from exploration, involvement, development, consolidation, stagnation, to decline/rejuvenation. See Box 1 for types of multipliers.

BOX 1
MULTIPLIERS

Generally, economic multipliers estimate the economywide impact on related variables from changing one variable in the specified economy (Tanjuakio, Hasting, and Tytus 1996).

- Output Multiplier: An output multiplier for a sector is defined as the total production in all sectors of the economy that is necessary to satisfy a dollar's worth of final demand for that sector's output (Miller and Blair 1985).
- Personal Income Multiplier: Every dollar change in final-demand spending (direct output) results in a change in income received by households.
- Employment Multiplier: Every dollar change in final-demand spending (direct output) in a sector results in a change in number of jobs in the economy.
- Business Taxes Multiplier: Every dollar change in final-demand spending (direct output) results in a change in business taxes (e.g., sales taxes).

Each of the above multiplier effects can be further disaggregated into direct effects, indirect effects, and induced effects.

- Direct Effect: the initial impact on an economy; production changes associated with changes in demand for the good itself
- Indirect Effect: the secondary impact caused by changing input needs of directly affected industries (e.g., additional input purchases to produce additional output)
- Induced Effect: caused by changes in household spending due to the additional employment generated by direct and indirect effects.

An example best illustrates these concepts. Consider the income multipliers for tourists' spending in Region X to be 0.3, 0.1, and 0.2 for direct, indirect, and induced multipliers, respectively. That means, for every one dollar tourists spend in Region X, 30 cents will be added to tourism sector income. Moreover, 10 cents will be added to all other related sectors' income when the tourism sector buys inputs from sectors, and these sectors buy inputs from more sectors. Another 20 cents income will be generated due to the consumption by newly created employment. Depending on the purpose of the calculation, the total multiplier either equals the sum of direct and indirect multipliers (0.4); or the sum of direct, indirect, and induced multipliers (0.6). This means that for every dollar brought in by tourists, 60 cents income are generated in Region X.

B.   Standard Multiplier Analysis

The standard multiplier approach is the simplest and least expensive way to calculate multipliers (Leitch and Leistritz 1985). The formula for calculating the standard income multiplier is:

$$\text{Income Multiplier} = \frac{1}{1-(MPC \times PSY)} \tag{4}$$

The marginal propensity to consume locally (MPC) represents the proportion of local income spent within the locality. One can make a crude estimate of the MPC by asking "what proportion of people's incomes is likely to be spent locally?" Empirical estimates vary from 0.20 to 0.80. PSY is the proportion of a tourist expenditure dollar that becomes income to local households, which typically ranges from 0.25 to 0.75. This variable measures how much local labor, interest, and profit is involved in the final price of the product. For example, one would expect to see a higher PSY in locally operated tourism businesses that hire mostly local people, than international chains that employ more nonlocal residents (Blakely 1994).

Another method to estimate the first approximation of a standard multiplier is known as "economic/export base analysis" (Leistritz and Murdock 1981, Oppenheim 1980, Bendavid-Val 1983). The equation for this method is:

$$Multiplier = \frac{total\ Employment\ /\ Income\ /\ Activity}{export\ Employment\ /\ Income\ /\ Activity}$$

(5)

For example, if total employment in a region were 3,000 of which 1,000 employees worked in the export sector, then the employment multiplier would be:

$$Employment\ Multiplier = \frac{3,000}{1,000} = 3$$

(6)

The standard multiplier approach has been used in tourism studies since the 1960s. The early works by Zinder (1969) estimated a high tourism sector multiplier relative to other industrial sectors. Further empirical work showed that the tourism industry did not provide the vigorous growth effect suggested by these early studies. While these studies were being scrutinized, the opinion that the tourism industry has a greater than average multiplier was still held.

The standard multiplier approach has been criticized for its oversimplification. However, no other model can approach the export base techniques (standard multiplier approach) in terms of inexpensiveness and simplicity (Pfister 1976).

C.   Econometric Techniques

These techniques involve statistically estimated equations that explain factors determining economic growth. Most common techniques used are regression models evaluating the relationship between tourism and economic growth. The primary difference between using econometric models and using standard multiplier approaches to estimate economic impact is temporal. Standard multiplier models use one single period reference whereas econometric models employ time-series data (Pleeter 1980).

Feder (1983) and Ram (1986) developed an econometric model to evaluate the impact of tourism on the economy. The study includes tourism output growth as a determinant of national income growth. Modeste (1995) examined some Caribbean countries using the same model specification and the results showed a statistically significant positive relationship between growth of tourism output and growth in income.

The use of econometric models to estimate regional economic impacts due to tourism has several advantages. Econometric models can accommodate a vast array of determinants such as capital stock. Another advantage in using these models is the sense of accuracy they impute and their ability to establish confidence limits on the estimates, which is lacking in other techniques such as standard multiplier analysis.

Two serious shortcomings exist when using econometric models to estimate impacts of tourism. One is data limitation and the other is model specification. When many variables are involved with limited time-series data, estimation becomes problematic due to the small degrees of freedom.

While both time-series and cross-sectional data exist at the national level, similar data at regional levels are scarce. Model specification problems involve a number of issues, from data availability and reliability to properly applying statistical and economic theory.

D.   Input–Output Analysis

An input–output (I/O) analysis uses an economic model that traces the flow of goods and services, income, and employment among related sectors of the economy. The I/O approach triggers the flow of activities as follows: When final demand for a good changes, the sector producing the good (output) purchases inputs from other industrial sectors, which in turn purchase inputs from other industries. Moreover, all of these industrial sectors purchase additional labor input. The employees use their compensation to purchase goods and services from the economy. Linkages among industries in a region create a ripple effect as a result of change in demand for a product. Strong linkages can lead to healthier economies, as capital flows through the economy rather than out of it. An I/O model is based on the premise that the economy can be decomposed into aggregate sectors. The I/O model is therefore a tabular representation of output flows from each of several industries or sectors and the flows of inputs to various industries or sectors.

The idea of an I/O model is simple. In an economy, sector output is denoted by vector X and vector Y is the final demand in each sector. They are connected through a matrix $(I\text{-}A)^{-1}$, known as "Leontief inverse", as shown in the following equation:

$$X = (I - A)^{-1} \bullet Y \tag{7}$$

The inverse matrix $(I\text{-}A)^{-1}$ is at the heart of an I/O analysis, where I is the identity matrix and A is the I/O coefficient matrix across sectors. An I/O model gives the I/O coefficient matrix A, so matrix $(I\text{-}A)^{-1}$ is derived. The change of outputs (ΔX), therefore, can be estimated from any change in final demand (ΔY) as illustrated in equation (9):

$$\Delta X = (I - A)^{-1} \Delta Y \tag{8}$$

In this case, ΔY is the incremental tourists' expenditure. Economic impacts of the incremental tourists' expenditure are represented in the changes of outputs across sectors (ΔX). Comparing the total change of outputs to the incremental tourists' expenditure, one will get the tourism output multiplier. Impacts on income, employment, and tax revenues, as well as their multipliers, can therefore be derived through their relations with the outputs.

Input-output analysis is the most widely used method for estimating economic impacts in terms of multiplier effects. Examples of I/O analysis in tourism studies include those by Curry (1986); Liu and Var (1982); Liu (1986); Seow (1981); Johnson, Obermiller, and Radtke (1989); Heng and Low (1990); Bergstrom, Cordell, Ashley, and Watson (1990); Dawson, Blahna, and Keith (1993); Douglas and Harpman (1995); Archer (1995); Archer and Fletcher (1996); Longwoods International (1992, 1993, 1995); and Institute for Tourism and Recreation Research (1996). Among the US states that have used I/O analysis for their tourism studies are Connecticut, Montana, Kentucky, New Jersey, New Hampshire, Pennsylvania, Vermont, and Wisconsin.

Aside from domestic studies, there are a number of international tourism studies that have used I/O analysis. Armstrong et al. (1974) studied the tourism impact on the Barbados economy using a 13 sector I/O transaction table. An output multiplier of 1.4 was obtained. Diamond (1976) used I/O to estimate the various output multipliers for Turkey; they ranged between 2.1 and 3.2. Heng and Low also employed the I/O model to analyze the economic impact of Singapore's tourism industry. They found that tourism's employment multiplier was three times that of total exports and twice that of manufacturing exports in Singapore. Archer (1995) compared the results of three separate I/O studies that measure the economic contribution of tourism on the Bermuda economy. He concluded that the level of employment in the economy depends heavily on tourism although the leading generator of foreign currency and income had been international business and finance since the early 1990s.

E.   SAM Analysis and CGE Model

Social accounting matrix (SAM) has recently been adopted to calculate tourism multipliers. In Wagner's recent study on Guaraqueaba, a region in the northeastern state of Paraná in Brazil, a SAM was used to examine the economic effects of tourism in that region. A SAM is an extension of an I/O table, with institutional sectors (households, government, and capital) and factor sectors (land, labor) included. Thus, not only are production linkages considered, but also consumption, income distribution, and saving/investment. In general, SAM describes the structure of an economy in terms of the links between production, income distribution, and demand within a region's economy (Thorbecke 1985).

Use of the computable general equilibrium (CGE) framework in modeling tourism effects became popular in the late 1980s (Hanson et al. 1990). A CGE model uses SAM as its data sources. Compared to SAM or I/O approaches, a CGE model better incorporates the price effect and input substitution in production in generating the economic impacts. Zhou, Yanagida, Chakravorty, and Leung (1997) conducted a study to compare the economic impact of tourism in Hawaii using the I/O model versus the CGE model. The study concluded that the results of the I/O model are similar in magnitude to those of the CGE model but generally higher, and that sectors closely associated with tourism exhibit the largest effects.

The I/O model, SAM, and CGE all provide impact estimates in a general equilibrium framework instead of single-market analysis (referred to as "partial equilibrium"). They capture not only the direct impact of tourists' expenditure but also the indirect and induced impacts that occur when tourist dollars work their way through the economy. Therefore, they are ideally suited to measure both the relative sizes of sectors that make up the economy and the linkages among them. They produce a structural model that illuminates the interactions among many sectors, and measures impacts as they reverberate through the economy. Understanding which types of economic activities generate higher returns can direct decisionmakers toward enterprises that will stimulate economic development within the region. The increasing use of these approaches in recent decades offers another advantage in these approaches, producing more comparable results across studies.

In practice, one of the major differences among the I/O models, SAMs, and CGEs is data requirement. The data requirements are less for an I/O model than for SAM or CGE. Constructing an I/O model is the first step in building a CGE model. Compared to I/O models, SAM and CGE models are neither quickly accomplished nor easily replicable due to the nature of the technique and intensive data requirements.

VI. DISTRIBUTIONAL ANALYSIS AND SUSTAINABILITY ANALYSIS

A.   Distributional Analysis

"Unmanaged tourism" is criticized for concentrating their benefits within a few destinations and big chains, while pro-poor tourism projects are expected to bring more benefits to remote areas, poor and vulnerable groups, and SMEs. Using the tourist profiles and the multiplier approaches, economic analysis of the pro-poor tourism projects have to show evidence that a significant portion of the tourist expenditure will be spent outside the big chain hotels and airlines, and that the poor and vulnerable will actually share in the tourism benefits.

B.   Financial and Institutional Sustainability

Assessing tourism project viability also requires detailed financial and institutional sustainability analysis. For revenue-generating tourism projects, a key assessment is whether they have enough funds for investment, operation, and maintenance. Where relevant, analysis is needed on the self-financing capacity of the project-operating entity through prevailing prices or user charges. In tourism projects, user charges include entrance fees, parking fees, visitor center and gift shop revenues, donations, and concession fees for market stalls. For revenue and especially nonrevenue generating projects, the fiscal impacts of the project should be considered. Where the tourism services are funded directly through the government budget, an assessment is needed of the fiscal impact of the project arising from, for example, operation and maintenance.

Assessment of institutional sustainability focuses on identifying functions, structure, and capacities of agencies. A clear and distinct role for public or private agencies needs to be established based on systematic assessment of institutional factors that underlie market and/or institutional underperformance or failure. For example, institutional factors are important in assessing whether or not a newly developed bus tour operated by a community joint venture would be successful and sustainable.

C.   Environmental Sustainability and Preservation Principle

Besides financial and institutional sustainability, tourism projects have to examine another very important aspect—environmental sustainability. Sustainable and pro-poor tourism projects start with the goal of better protecting and managing natural and cultural heritage sites while making tourism beneficial to the poor. One needs to be ensured that preservation is not sacrificed while developing tourism. From the economic analysis perspective, there is a simple way of doing this, called "preservation principle." The project has to look into the preservation inputs under

both "with" and "without" project scenarios and ensure that the preservation inputs, both in absolute terms and per visitor terms, will increase with the project. This point of analysis goes beyond the conventional financial sustainability analysis and cost recovery, as it mainly concerns the distribution of project revenues toward preservation. For example, in a project to develop a cultural heritage site, one has to analyze how many archaeologists and staff are hired and how much of the preservation money would be made available to them without the project. The analysis has to show how these inputs would change in both absolute and per visitor terms after the project is implemented and more visitors start arriving.

VII. AN ILLUSTRATIVE EXAMPLE: SAMBOR PREY KUK CULTURAL TOURISM DEVELOPMENT PROJECT[1]

A.   Site Description

Sambor Prey Kuk Cultural Landscape in Cambodia is the location of the seventh century pre-Angkorian city of Isanapura, where the Sambor Prey Kuk monuments are found. Nearly 200 archaeological sites have been discovered scattered throughout more than 20 square kilometers that comprise the cultural landscape. West of the main temple clusters is the ancient city of Isanapura, by historical accounts once home to more than 20,000 households and linked to Angkor Wat by an ancient road.

B.   Project Description

This is one of the subprojects under the GMS Sustainable Tourism Project (TA 6279). This subproject will:

(i)   map and create an updated geographic information system for the site

(ii)   develop and implement a heritage based zoning plan and training for site managers and community leaders

(iii)   undertake minor upgrading and improvement to the site's 14 km access road

(iv)   construct and install a visitor interpretation center, facilities for presentation of site features, protection infrastructure, and up to 15 km of interpreted walking trails

(v)   build the capacity of local communities in tourism-related livelihood development and cultural heritage management

(vi)   develop and implement a monitoring program

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[1]   Although this example is taken from the existing ADB project (GMS: Preparing the Sustainable Tourism Development Project), some numbers presented here are hypothetical and are for illustration only.

C.   Project Rationale

Development of zoning plans, construction of the access road and visitor interpretation center, and preservation of the site are public/common goods. Improving access and management of visitor flows at the site and protecting the site's tangible and intangible heritage values as a tourism asset both require collective action. This provides a strong rationale for public investment. In addition, the project will serve as a model for controlling the impact of tourism on threatened cultural heritage sites and local communities in Cambodia, and hopefully provide useful information for future similar projects in the country.

D.   Demand Analysis: Visitor Profile and Expenditure

In 2005, the province where Sambor Prey Kuk is located received 225,790 tourists most of whom (96%) comprised domestic tourists. Estimates by the Provincial Tourism Office suggest that international tourists stay an average of 1.61 days and spend $34.43 per day, while domestic tourists stay an average of 2.37 days, spending an average of $27.92 per day. The volume of international and domestic tourism arrivals to Kampong Thom province increased by an average of 41% and 15% per year, respectively, between 2002 and 2005, reflecting a growing volume of tourists going to Siem Reap by road from Phnom Penh. It also reflects interest in exploring other ancient monuments outside the Angkor Wat temples, as well as holiday vacation purposes in the case of the domestic market. In 2005, Prasat Sambor Prey Kuk received 6,800 international tourists (about 78.5% of total international arrivals to the province) and 38,000 domestic tourists (about 17.5% of total domestic tourists to the province.) International tourists to the site increased by an annual average rate of 40.3% between 2002 (2,461 visitors) and 2005. Data on the growth of domestic tourists to the site are not available but are reported to have increased at a much slower rate of less than 10% per year. The visitor forecasts ''with'' and ''without-the-project'' are presented in Table 2. The length of stay suggested by the survey averaged 0.64 days for international and 0.71 days for domestic, which includes festivals and day picnicking.

Project surveys of international and domestic tourists in Kampong Thom asked respondents about their daily tourism expenditures that were adopted for the current economic analysis. Average daily expenditure from the survey was $34.40 for international visitors and $27.90 for domestic visitors. The total incremental tourist expenditure is estimated by multiplying them with the corresponding incremental visitor days.

TABLE 2
FORECAST OF VISITORS FOR PRASAT SAMBOR PREI KUK

	2011	2012	2013	2014	2015
Number of Visitors					
With project					
International	18289	21033	24188	27816	31988
Domestic	50924	53470	56143	58950	61898
Total	69213	74502	80331	86766	93886
Without project					
International	14095	10879	8396	6480	5000
Domestic	35647	42776	44915	47160	43329
Total	49741	53654	53310	53640	48329
Length of Stay (average)					
With project	Day	Day	Day	Day	Day
International	0.64	0.65	0.67	0.68	0.70
Domestic	0.71	0.72	0.73	0.74	0.75
Without project					
International	0.60	0.53	0.45	0.38	0.30
Domestic	0.60	0.55	0.50	0.45	0.40
Visitor Days					
With project					
International	11623	13705	16151	19022	22392
Domestic	36079	38438	40943	43601	46423
Total	47702	52144	57094	62624	68815
Without project					
International	8457	5711	3778	2430	1500
Domestic	21388	23527	22457	21222	17331
Total	29845	29238	26235	23652	18831

E.   Application of Income Multiplier

The income multiplier for the tourism sector in the region is estimated at 0.60. In other words, for every tourist dollar spent in the economy, 60 cents of local income is generated, including direct effects and indirect effects. Following the application of the income multiplier of 0.60, the average benefit per international visitor is estimated at $34.40 x 0.6 = $20.7; and for domestic visitors is $27.90 x 0.6 = $16.8, based on which the economic internal rate of return is calculated to be 16.4% for the project. This is based on the assumption that there is no substitution effect at all for both international and domestic visitor spending. Such assumption, as discussed in Section IV, is highly unrealistic especially for domestic visitors. Making further assumptions:

(i)   Domestic visitors' spending has a 80% substitution effect, meaning 80% of the $27.90 is deducted from the domestic visitors' spending elsewhere within the economy.

(ii) While the tourism income multiplier is estimated at 0.6, the "average" of the income multipliers of all consumption sectors within the economy is 0.45, meaning that each dollar domestic visitors spend elsewhere on average yields $0.50 income within the economy.

Therefore, the average benefit per international visitor is estimated at $34.40 x 0.6 = $20.7 and for domestic visitors is $27.90 x (1-80%) x 0.6 +$27.90 x 80% x (0.6-0.45) = $6.70[2], based on which the economic internal rate of return is calculated to be 10.1%.

F. Distribution Analysis

Evidence is collected through field investigations, focus group discussions, and household surveys to ensure that the poor will benefit from tourism planning and development in the area. The primary source of income in Sambor Prey Kuk is rice cultivation. Both men and women, and at times children, engage in agriculture, especially during the raining season from June to September. The household survey shows that tourism-related activities are welcomed by most to supplement their household income and "fill in spare time." The poorest groups in the area, made up of women, women heads of households, ethnic minorities, war disabled, and poor resettled people are best positioned to benefit from the expanded markets for traditional crafts, like weaving, embroidery, pottery, and wood craft; cultural performance; and increased production of agricultural food items for sale. These activities not only can be managed by the poor even though they are minimally literate or educated but also are culturally acceptable to the men.

Fees collected from tourists visiting Sambor Prey Kuk will contribute to the creation of a village development fund, which brings multiple benefits in enabling villagers to discuss real options and to make decisions about investments in their community. Sometimes they use the village fund to help out their poorest neighbors, since they know who are deserving and can monitor the results.

On the downside, the social costs induced by increasing tourist number such as increased trafficking in women and children, child labor, HIV etc. are likely to be borne disproportionately by the poor.

G. Sustainability Analysis

Financial sustainability is concerned with whether the revenue collected from the project will be sufficient to cover the operation and maintenance costs of the project. Project surveys of international and domestic tourists in Kampong Thom asked respondents to indicate their interest in visiting the site if developed in the way proposed and their willingness to pay an entrance fee. The Tourism Management Committee will collect and manage the site entrance fee for international and domestic tourists, to cover use of walking trails, shuttle bus services, and visitor center. Other revenues that the Tourism Management Committee will collect are concession fees for market stalls at the gift shop. Analysis shows these measures will guarantee adequate institutional and financial resources to operate and maintain the site.

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[2] This involves the assumption that the domestic visitors' substituted spending, which takes place elsewhere within the economy, also has an income multiplier of 0.6.

Environmental sustainability is concerned with whether the value of the site is eroded or preserved by increased number of tourists. In Sambor Prey Kuk, the preservation spending and efforts are reviewed, in both absolute terms and per visitor terms, with and without the project. It shows that, without the project, the site will continue employing one archaeologist and around 30 supporting staff with an annual preservation budget of around $50,000 coming from the government budget. Considering the site currently is receiving around 31,332 visitor-days a year (comprised of 4,352 international and 26,980 domestic travelers), this is an average preservation expense of $1.60 per visitor per day. This input might decrease over the years if the site does not generate revenue to support the preservation. With the project, the site will receive an additional $40,000 as preservation inputs. This comes from a committed government transfer from 40% of the admission fees from international visitors. The increased preservation inputs will be spent on hiring one more archaeologist and several support staff, and undertaking reconstruction work on the monuments. By 2011, the number of visitors per day to the site is going to increase to 47,702. The preservation input will increase to $1.87, an 18% increase compared to the current level.

VIII. CONCLUSIONS

ADB's Medium-Term Strategy II aims to enhance ADB's relevance by meeting the key development challenges facing the region in reducing poverty. One of the identified strategic priorities includes strengthening inclusiveness to enable disadvantaged groups to benefit equitably from the opportunities that development provides. A major operational implication is to selectively focus on operations that promote productivity-enhancing reforms, employment-intensive rural development, and social development. In this regard, pro-poor tourism could have an important role to play.

This paper has introduced a simple analytical framework that would underpin the systematic *ex ante* economic impacts of pro-poor tourism projects. This framework would help evaluate the outcomes and impacts of tourism projects including distilling insights for possible replication.

APPENDIX 1
APPROVED TOURISM-RELATED TECHNICAL ASSISTANCE AND PROJECTS

NAME OF TECHNICAL ASSISTANCE	AMOUNT (US$ '000)
RETA 6279 GMS: Preparing the Sustainable Tourism Development Project	900
RETA 6225 South Asia Subregional Economic Cooperation Human Resource Development and Capacity Building	600
RETA 6179 Greater Mekong Subregion Tourism Sector Strategy	800
RETA 6131 South Asia Subregional Economic Cooperation Tourism Development Plan	450
RETA 5893 Mekong/Lancang River Tourism Infrastructure Development	600
RETA 5807 Tourism Skills Development in the GMS	125
RETA 5743 Mekong/Lancang River Tourism Planning Study	600
RETA 5647 Regional Program to Train Trainers in Tourism in the GMS	130
RETA 5440 Tourism Financing	100
TA 3454 Building Capacity in Tourism Planning	586
TA 3200 Strengthening Tourism Planning	150
TA 2685 Tourism Sector Development	600
TA 2483 Tourism Development	405
TA 2483 Tourism Development (Supplementary)	150
TA 2140 2nd Tourism Infrastructure Development	460
TA 1662 Tourism Development Study	295
TA 1432 National Tourism Plan	550
TA 1428 Tourism Development	100
TA 1384 Tourism Master Plan Study	275
TA 1298 Tourism Development	65
TA 1137 Tourism Development Program	460
TA 0991 Tourism Master Plan	375
NAME OF PROJECT	**AMOUNT (US$ million)**
NEP: Tourism Infrastructure Development (Loan 1156)	10.4
NEP: 2nd Tourism Development (Loan 1971)	17.2
GMS: Mekong Tourism Development Project (CAM/LAO/VIE) (Loans 1969/70/71)	35.0

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