

Cruise tourism and community economic development in Central America and the Caribbean: The case of Costa Rica

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Abstract: This paper illustrates an economic approach to understanding the cruise tourism industry as a driver of economic development in Costa Rica. The objective is to describe the role and activities of the cruise ship industry and identify sources of economic benefit and cost such that more informed local policy decisions about the cruise ship tourism might be made. For example, our analysis indicates: the cruise tourism industry competes with the cargo shipping industry for port space at a significant cost to Costa Rican ports; the amount of money injected into the local economy per cruise tourist is substantially lower than for other types of tourism; Cruise ships purchase relatively few supplies in Costa Rica; Cruise ships generate a great deal of human waste, water and air pollution, which can create a serious health hazard, cleanup costs, and which are not commensurate with other types of tourism development available to Costa Rica; Decision makers may want to consider that investment in cruise tourism friendly ports may be less efficient from a national perspective than investment in infrastructure (e.g., airports) to increase more profitable types of tourism; And leaders may want to consider the encouragement of smaller “pocket” cruises over the current cruise version of mass tourism. This approach should be applicable to communities wherever cruise tourism currently exists or is under consideration to be included in the portfolio of community economic activities.

Keywords: Cruise ship tourism; Economic development; Costa Rica

Resumen: Este documento ilustra un enfoque económico a la comprensión de la industria de turismo de cruceros como impulsora del desarrollo económico en Costa Rica. El objetivo es describir el papel y las actividades de la industria de cruceros e identificar fuentes de costo y beneficio económico, a fin de que se puedan tomar decisiones locales de política con más información sobre el turismo de cruceros. Por ejemplo, nuestro análisis indica que la industria de turismo de cruceros compite con la industria de despacho de carga por espacio portuario a un significativo costo para los puertos de Costa Rica: la cantidad de dinero inyectada a la economía local por turista de crucero es sustancialmente más baja que para otros tipos de turismo. Los cruceros de turismo compran relativamente pocos suministros en Costa Rica y generan una gran cantidad de desechos producidos por las personas así como contaminación de agua y aire, lo que puede crear un serio peligro para la salud y costos de limpieza que no son proporcionales con otros tipos de desarrollo turístico de los que dispone el país. Quizás los encargados de tomar decisiones quieran considerar que la inversión en puertos amistosos con el turismo de crucero podría ser menos eficiente desde una perspectiva nacional que la inversión en infraestructura (por ejemplo, aeropuertos) para aumentar tipos más rentables de turismo. Asimismo, quizás los líderes quieran pensar en estimular cruceros más pequeños “de bolsillo” más bien que la actual versión de turismo masivo. Este método debería ser aplicable a comunidades donde el turismo de crucero existe actualmente o se está considerando para incluirlo en la cartera de actividades económicas comunitarias.

Palabras clave: Cruceros turísticos; Desarrollo económico; Costa Rica

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Introduction

Cruise tourism is of small, but increasing, importance in Central America and the Caribbean. Cruise tourism is of substantial importance in particular port locations and is being touted as a desirable local economic development opportunity within the region. Tourism, like all engines of economic development, has desirable and undesirable features. The results of objective research about cruise tourism economics and community economic development appear to be rather site specific, in part due to strong differences between terminal main (dis-)embarkation ports and semi-terminal (primarily for tourist visitation) ports (McKee and Mamoozadeh, 1994). Conflicting reports on purchasing patterns among cruise tourists (Hall and Braithwaite, 1990; Henthorne, 2000) reveal that the specifics of the community economic impact of cruise tourism constitute an important hole in the literature base on the industry (Johnson, 2002; CTO, 2004). No studies focusing on cruise tourism in Costa Rica have been published to date.

A thorough understanding of the industry facilitates recognition of the potentials and pitfalls of a chosen driver of economic development. Economic issues surrounding the cruise ship industry include direct and potential impacts on the port authorities and port communities, hidden environmental impacts on marine and coastal ecosystems, development alternatives to cruise ships for port communities, distributional impacts and cultural implications of cruise tourism development and socio-economic impacts of disembarking crew members, in addition to the typically tracked tourist expenditures.

A number of particular challenges in estimating the economic impact of cruise ships have been identified: 1) The crew is non-local, so they do not pay income tax in the locality, their jobs do not "count" toward local economic development, and there is significant leakage of their wage expenditures to other ports and their home countries; 2) The cruise liner ownership is non-local and corporate, so they do not typically pay host nation income taxes, nor are they required to adhere to local labor standards or a number of other laws, and

are likely to invest their profits outside of the port region or country; And 3) for some tourist visits the cruise is a part, but not the sole purpose of the trip, making it challenging to establish which expenditures can be attributed to the cruise industry (Braun, et al., 2002).

This paper illustrates an economic approach to understanding the cruise tourism industry as a driver of economic development through a preliminary analysis of the industry in Costa Rica. The objective of this approach is to describe the role and activities of the cruise ship industry in Costa Rica and identify sources of economic benefit and cost such that more informed local policy decisions about the cruise ship tourism might be made and a more comprehensive inquiry into this important question might be initiated in the near future. This approach should be applicable to communities wherever cruise tourism currently exists or is under consideration to be included in the portfolio of community economic activities.

Approach

Four principal economic agents are of interest to this study: cruise tourists, cruise ship employees, port communities and countries, and the cruise company itself (see, for example, Dwyer et al., 2004; Braun et al., 2002; Gabe et al., 2003). Here, we focus on the implications of the industry for local communities. Cruise tourism influences all four aspects of the tourism market: transportation, accommodation, tourism services and tour operations (McKee, 1988). The cruise industry can provide either complementary or competing goods and services to local providers. To the extent practicable, we provide local information about each of these potential sources of economic opportunity and/or conflict.

A mix of primary and secondary data collection, including expert interviews and tourist surveys, descriptive and econometric analysis are appropriately applied to these challenges in order to illuminate socio-economic issues and information surrounding cruise tourism as an engine of economic development in Central America and the Caribbean. We illustrate general approaches to the community economic

analysis of cruise tourism through work undertaken in Costa Rica.

Personal interviews and secondary data constitute the primary information sources for this first estimation of the effects of cruise tourism on Costa Rica. Artisans, travel agencies, port administrators, municipal officials, tourism agencies, university personnel and others were interviewed or otherwise consulted in the port communities of Limon, Puntarenas and Caldera. The Vice Minister of Public Security, tour operators who work directly with the ships, port agents and researchers at the university of Costa Rica were also interviewed for this research. In addition, cruise passenger data collected by the Costa Rican Institute of Tourism (ICT) were analyzed. The data for this study were collected from June through August 2004.

We begin with a review of the information available describing the role and growth of the cruise ship industry within the broader context of the tourism industry in Central America and the Caribbean. We use published information and secondary data sources for this overview, supplemented by personal interviews with key informants within the industry.

Next, although a great deal of economic impact information can be derived from the travel cost surveys commonly conducted by national tourism agencies, it is both important and useful to obtain an understanding of the economic contribution of cruise tourism from the perspective of local businesses for a number of reasons. Tourist surveys often will reveal expenditures in the port country, but not necessarily the port community. If the distribution of the costs and benefits of cruise tourism development between the port community and the country as a whole do not fall equitably, there may be a potential need or justification for corrective social, environmental or economic policy. In addition, not all local expenditures remain in the local economy. The size of the local multiplier is dependent upon the amount of indirect and induced local purchases driven by the direct purchases of tourists.

For example, cruise tourist expenditures in St. Christopher and Nevis was less than 50% of their expenditures in Antigua and Barbuda (McKee, 1988). The apparent dif-

ferences in economic impact per visitor may be exacerbated or eliminated if the differences in purchasing behavior are from products with substantial local content or are from imported luxury goods. The local multiplier for cruise ship expenditures can be understood through interviews with port area businesses.

Finally, the cruise industry poses a significant source of potential pollution and environmental risk. The industry may be responsible for socially unsavory impacts of tourism development that would provide valuable information to local decision-makers, whether or not the information is derived specifically from that locality.

For example, few *ex ante* approaches exist for estimating the potential cost of potential impacts of pollution due to cruise ships, cargo ships or other types of development. In all such cases, we are dependent upon case history, and a literature review to establish what has happened in the past, its probable impact and consequences, and to attempt to get a gauge of the likelihood of it happening in the future in a particular location.

This is not an exact science by any means, but it is the best we have and valuable lessons and precautionary actions might be considered locally appropriate based upon those lessons learned. Such broad categories of considerations and concerns will be catalogued by this research. Where appropriate, the likelihood, extent and estimated impacts of these features will be derived from available information and used as a means to illustrate the issues.

Analysis and Results

Regional growth of the cruise industry

The long haul passenger jet destroyed the passenger shipping industry in the 1960s. Cruise ships made the jump from sea travel as transport to sea travel as leisure. Cruise tourism is now the fastest growing part of the tourism sector (Klein, 2002; TIES, 2004; McKee and Mamoozadeh, 1994). Cruise ships carried 500,000 passengers in 1970, some 8.5 million (6 million Americans) in 1997 (Economist, 1998) and about 9.8 million passengers in 2003 (BREA, 2004). The cruise industry

accounts for 1.4% of all international tourists, ranking 20th if the industry were a nation, and 2.7% of global tourism receipts (8th) (Kester, 2002). In North America the number of people taking cruises doubled between 1990 and 2000 and Americans constitute some 72% of the global cruise market, although cruising is becoming more popular with Europeans in recent years (Kester, 2002).

In 2002, the global cruise industry capacity was 183 vessels and about 213,000 berths growing at an annual rate of about 7% (Kester, 2002). A more recent count of the global fleet of cruise ships is currently 220 ships, though the industry announced plans to increase that fleet by 25% between 2000 and 2005. The cruise ship industry also plans 56-70 new terminals (docking points) in the US over the next 15 yrs (Blue Water News, 2004). Not only will there be more ships, but ship capacity is increasing as well. Older cruise liners typically had capacities of around 1,000 passengers. In 2002, the average cruise liner had 1,163 berths, weighed 43,000 tons, and was in service for about 15 yrs. The largest four cruise corporations have a generally younger (10 yrs) and larger (1,5000 berth average) fleet (Kester, 2002). A modern 70,000 tonne cruise liner can house 2,000 people, while a new 135,000 tonne ship can house 3,100.

Globally, eight companies dominated the industry in the late 1990s (Douglas and Douglas, 1999). Currently, it is controlled by two: Carnival Corporation and Royal Caribbean Cruise Lines. Carnival Corporation includes Carnival, Holland, Costa, Cunard, Windstar and Seaborn cruise companies. Royal Caribbean Cruise Lines includes RCI, Celebrity and Island cruise companies (Klein, 2003a). Carnival Corporation reported profits of \$1.02 billion on revenues of \$4.37 billion (30% return on investment) in 2002, making it the most profitable leisure company in the world. Royal Caribbean reported \$254 million in profits on \$3.15 billion in revenues (9% return), P&O Princess, \$301 million on \$2.45 billion (14%), and Star Cruises, including Star, Norwegian and Orient cruise lines, reported \$82.6 million in profits on \$1.57 billion (6%) in revenues (Klein, 2003a). In 2003, P&O Princess became part

of Carnival Corporation.

Profits and total revenues for the top four cruise lines combined were \$1.66 billion and \$11.54 billion, respectively, or a 17% industry level return on investment in 2002 (Klein, 2003a). Cruise ships typically enjoy 90-95% occupancy rates, relative to the 70% rates striven for in the hotel sector (Economist, 1998; Pattullo, 1996a). Despite, or perhaps resulting in, their profitability, both Carnival and Royal Caribbean are registered in "flag-of-convenience" nations, so they avoid many U.S. environmental and labor laws and don't pay U.S. corporate income tax (Klein, 2003a).

The cruise industry is heavily concentrated in the Caribbean, Alaska and the Mexican Riviera. Some 2/3 of the global cruise ship capacity is located in the Caribbean during the winter months (October-March) and about ¼ in the summer months (April-September). In 2002, Carnival Cruise Lines controlled 38% of the market in the Caribbean and Mexican Riviera, Royal Caribbean commands 26%, P&O Princess had 6% and Star Cruises some 8% of total passengers. With the merger between Carnival and P&O Princess in 2003, two carriers account for more than 2/3 of all cruises in the region. Between the winter and summer months, the global fleet shifts substantially toward Alaska (0-16%), the Mediterranean (8%-31%), and Atlantic Europe (0-18%)(Kester, 2002). The trend toward larger ships should increase rather than decrease this seasonality (McKee, 1988).

Cruise tourism as economic development

McKee (1988), Fish and Gunther (1994) and others find a number of fairly unique concerns and opportunities with regard to the encouragement of cruise tourism as an engine of economic development. These concerns focus on local control and the distribution of local costs and benefits of cruise activities.

Communities and local businesses dependent upon cruise tourism must compete in an environment dominated by very few multi-national corporations. The local economy becomes dependent upon the economic conditions of international consumers and on the global economic opportunities available to the cruise ship industry, rather than local economic conditions

(McKee, 1988; Fish and Gunther, 1994). The dependence relationship between industry and locality is exacerbated by research findings indicating that there is a high degree of substitutability among sun and fun category tourism destinations (Caribbean Islands, southern Mexico, southern Europe) (Fish and Gunther, 1994). Such conditions reduce local volition, economic development alternatives and profit margins and increase potential local economic variability.

McKee (1988), McKee (1986) and McKee and Mamoozadeh (1994) argue that there may be some unique opportunities provided by cruise tourism as a driver of natural resource based economic development. For example, port calls create a brief taste of a location that may result in a longer visit in the future that may not have been otherwise considered. Gabe et al. (2003) find that the clientele served by cruise ships is at a substantial variance from the more typical Maine visitor. In addition, since cruise tourists bring their beds with them, environmentally and financially costly investment in local built infrastructure can be postponed or avoided entirely. Fewer local tourist services imply lower local dependence on tourist expenditures and, potentially, a more informed approach to further tourism development planning. However, it also implies lower local tourist expenditures, thus economic activity, and local multiplier effects.

Unfortunately for many cruise destinations, though probably not Costa Rica, construction materials are largely imported and the better known resorts and hotels are foreign-owned. For example, Alaska, similar to many island economies, demonstrates high levels of leakage (wage, high cost of goods sold (low value added), and service), low levels of economic diversification and infrastructure development (McDowell Group Inc., 2000). The low degree of local value-added, or high degree of leakage out of the local economy, results in a relatively low amount of positive economic impact.

Increasing the proportion of local content, or reducing the imported content, of tourism services, increases local multipliers. Most items in "duty free" shops have very little local content. Wilkinson (1989)

estimates that 40% of money spent in Caribbean Island economies immediately leaks out to multinational hotel chains and airlines, resulting in abysmal income multiplier estimates of 0.58-1.195 (Fish and Gunther, 1994). These, and the few other published results that are not derived from consulting firms, have lead researchers to strongly question the accuracy of the 2.5 multiplier used by Price Waterhouse's FCCA contracted study in 1994 (Pattullo, 1996a) and beyond (e.g., Price Waterhouse Cooper, 2004).

Local multipliers will be higher for terminal (home) ports for cruise ships than for ports that simply entertain day visitors from the ships. In addition, multipliers are higher as the population and complexity of the local economy increases. Braun et al. (2002) found that the total impact of the cruise industry increased almost two fold by expanding the scale of analysis from Brevard County to include all of Central Florida. Moreover, the share of economic impact shifted away from cruise liners (89% vs 94%) and toward passengers (7% vs 5%) and crew (4% vs 2%) as the scale of analysis became smaller. That is, passenger and crew spending is concentrated near the port, whereas cruise liner spending is more geographically dispersed.

Although the cruise industry initially touted exotic ports of call as a principal thrust of its tourism experience, increasingly marketing campaigns focus on the on board amenities available to cruisers. "Mass cruise tourism has been likened to all-inclusive resort experiences, with the cruise ship itself providing the holiday experience rather than any destinations to be visited" (Ubersax, 1996). This shift from floating hotels to floating resorts increases the incentives for the industry to maximize the time (and money) cruisers spend on board and minimize their time in port. As such, cruise ship companies are in direct competition with local communities for the expenditures of cruise tourists (McKee, 1988; McKee and Mamoozadeh, 1994) and with land based resorts for the tourism market more generally (Kester, 2002; Pattullo, 1996a).

In order to maximize their take, the industry sells land based tours to selected providers on board for a substantial mar-

kup (typically 50%) and contracts with local retailers for “preferred” status in exchange for as much as 40% of gross sales (Klein, 2003a). Some, including Disney Corporation, have gone so far as to purchase their own islands, cays, or beaches, generating the least possible positive local economic impact (Pattullo, 1996a). “With respect to the Caribbean region, it has been suggested that ‘there is little interaction between the passengers and the economy and the population of the islands they visit’ (Barry et al., 1984)”(McKee, 1988).

Local economic impact of tourist expenditures

Tourism expenditures are considered exports because new money comes from outside of the region in order to purchase goods and services from inside the region. Export industries, also called base industries, are essential to regional growth and development because they increase the amount of regional economic activity, whereas nonbase industries simply increase the rate of circulation of goods and services within a region and do not create any new wealth.

There is great variety and, therefore, site specificity in predicting the amount of ship board vs in port spending by cruise tourists. Although many costs of cruise vacations are included in their prices, Klein (2003b) finds industry wide averages of \$220-232 per day in ship board spending. This constitutes a sharp increase relative to CLIA’s 1987 report of \$22.50 per day (McKee and Mamoozadeh, 1994), even adjusting for inflation and, potentially, income differences over the period.

Klein (2003b) implies that the changes in ship board spending come at a cost to land based spending and are due to changes in the marketing of cruises as floating

resorts rather than simply floating hotels. Since about 90% of cruises are between two and 8 days in duration (Douglas and Douglas, 1999), and the average cruise is about 7 days (Kester, 2002; McKee and Mamoozadeh, 1994; Pattullo, 1996a), approximately \$1,500 in tourist spending per trip in addition to the cost of the cruise itself can be estimated from Klein’s numbers. Kester (2002) calculates an average of \$1,341 in revenues per cruise across all cruise types.

Average land expenditures for cruise tourists in the Caribbean range from \$15 to \$270 in 2001 (CTO, 2003), differences driven largely by the purchases of imported luxury goods with little local content. Pattullo (1996a) finds 45-67% of onshore expenditures went to duty free shopping, 17% to tours and attractions and 8% on food. Gabe et al. (2003) finds an average land expenditure of \$85 in Bar Harbor, Maine, an estimated \$106 including tours purchased on board. Both means are somewhat skewed by jewelry purchases (Gabe et al., 2003). In the US Virgin Islands some 80% of onshore purchases is for duty free shopping, while the similar figure for Martinique is 50% (Pattullo, 1996a).

ICT (2004) reports expenditures of approximately \$90-100 per cruise tourist to Costa Rica. However, ICT (2004b) surveys indicate that only about \$28-36 of cruise tourist expenditure pass directly from tourist to local goods and service providers (Table 1). For example, through surveys we estimate approximately 80 artisans sell about \$74 worth their wares each at each port and for each ship (Guiliano et al., 2004). If at most 800 (400) tourists per ship are exposed to the artisans, the average expenditure on arts and crafts would be about \$7-8 (\$14-16) per person.

	Puerto Limon-Moin	Puerto Caldera-Puntarenas	Total
Purchased tour on board	59.2%	39.9%	56.8%
Cost and average duration	\$85.35- 5 hrs	\$72.41- 6 hrs	\$84.32 – 5 hrs
Purchased tour at local agency	8.6%	3.8%	8%
Cost and average duration	\$48.12 – 4 hrs	\$29.17 – 3 hrs	\$46.94 – 4hrs
Self guided tour	0.9% - 3 hrs	11.4% - 4 hrs	2.1% - 4 hrs
Average time off ship	4.24 hrs	4.41 hrs	4.26 hrs
	(min = 1; max = 10)	(min = 3; max = 8)	(min = 1; max = 10)
Average expenditures off ship	\$36	\$26	\$34

Table 1: Tour purchases by Costa Rica cruise tourists. Source: ICT Tourist Survey, 2003

Tour	Description	Duration (hrs)	Cost on board (US\$)
City tour of San Jose	Tour of city and surrounding area, coffee plantations	10	100
Visit to Sarchi	Arts and crafts shopping	5	40
Costa Rica countryside and coffee tour	Coffee plantations around San Jose region	8.5	89
Carara/Villa Lapas, The kingdom of nature	National park and private biological reserve	8.5	99
Villa Blanca and Los Angeles Cloud Forest		8.5	94
La Paz Waterfall and Gardens	Private park	8.5	82
Eco-jungle River Adventure	Biological reserve	5.5	79
Corobici River Raft Float	Trip down the Corobici River	7.5	99
Rainforest Skywalk and Pura Vida Gardens	Visit to Braulio Carrillo National Park	8.25	109
Arenal Volcano and Tabacon Resort Hot Springs	Volcano and private resort visit	10	99
Poas Volcano and Cloud Forest	National park	9	79
Horseback Riding Adventure	Horseback riding	5	79
Costa Rica Outrigger Canoe Adventure	Beach and canoeing excursion	5.5	99
Pacific Aerial Tram	Rain forest	5.25	109
Averages		7.5	90

Table 2: Tours offered to Costa Rica cruise tourists, P&O Princess. Source: www.princess.com

Approximately 35% of tours purchased are ½ day in duration, allowing participants to return to the ship for their pre-paid meals. The cruise operator also compensates local tour companies for the tours purchased on board (Table 2). The cruise line typically captures as much as 50% of the fees charged the tourists for these local tours (Klein, 2002), so we might calculate an average of about \$70-75 per cruise tourist, or 70-75% of total local tourist expenditures, finds itself in the local economy.

The economic impact of that \$70 increases (multiplies) with the proportion of locally produced goods purchased (e.g., locally grown and processed agricultural products, locally grown and produced arts and crafts) and decreases with the proportion of imported goods (e.g., canned and bottled beverages, film, sunscreen, pharmaceuticals). Braun et al. (2002) estimate cruise passenger spending multipliers of 1.43 in employment effects, 1.62 for wages and 1.88 in value added creation for an economically complex and highly populated terminal port in Central Florida. INCAE (2004) estimates that about \$0.40 of each tourist dollar spent in

Costa Rica remains in the local economy, potentially implying a local multiplier or 1.4 and a total local impact of about \$98 per cruise tourist to Costa Rica.

The ratio of employees to passengers on most cruise ships is approximately 1:2 or 1:3 (McKee and Mamoozadeh, 1994), increasing to four employees for every five passengers on luxury liners (Klein, 2003a). Thus, each cruise ship that comes to a Costa Rican port carries 500 to 1000 employees (e.g., musicians, maids, cooks, etc.). Based on anecdotal evidence, approximately 40% of ship employees tend to disembark at each port of call. Costa Rican ports of call are thought to be popular with ship employees in part due to the country's reputation for value in dental and health care.

One operator in Limon who markets to ship employees relates that he captures approximately 20% of the ship employees with shorter duration tours and activities including rafting, canopy tours, national park visits, beach parties at an average of about \$60 per person. Braun et al. (2002) finds multipliers for crew spending of 1.66 employment impact, 1.59 wage effect and 1.66 in value added creation for Cen-

tral Florida. If the local multiplier for cruise ship employee purchases in Costa Rica is more like 1.4 (due to lower population and less economic complexity), and at this point there is insufficient evidence to suggest otherwise, the total local economic impact per visiting ship employee purchasing a tour is about \$84 or about \$5,380 in local economic impact per ship, excluding local expenditures of employees who left the ship but did not purchase tours.

Cruise ships, port authorities and local business

Cruise and cargo ships compensate ports for services provided to them. Cruise ships are charged per passenger and per meter for a stay of up to 12 hrs, for services related to passenger disembarkation. Puerto Limon receives about 7 to 11 times as many cargo ships as it does cruise ships during the high tourist season. In Puntarenas, the number of cruise ship visits is steadily declining, while the number of cargo ships is steadily increasing. From the perspective of the port authority, when the port is working at or near its capacity any cruise ship docked represents a (fraction of or multiple of) cargo ship that could not be attended. As a result, typical revenues (and costs) of cargo ships should be weighed against that of cruise ships in the port authority's accounting framework.

It is considered a nearly universal practice to give docking priority to cruise ships over cargo ships, to the considerable detriment to the latter. Wood (1982) contends that it is the nature of the cruise ship industry not to wait in line; but rather to move along to another port when faced with even slight delays, which contributes to the universality of this port priority policy. Wood (1982) finds that this priority policy for cruise ships is generally unjustified economically.

The port of Limon charges cruise ships \$0.48 per meter per hour and each cruise ship is charged a flat rate of \$5,864 to dock the ship for passengers to disembark. Puntarenas charges \$0.35 per m-hr and a flat rate of \$4,800 for a ship of typi-

cal cruiseline size. In Puerto Limon, cargo ships pay a flat rate by registered weight, a rate per meter-hr that is almost three times the cruise ship rate (\$1.27/m-hr), a port use fee of \$0.87 per tonne, tugboat charges of \$0.19 per registered tonne, and a within port navigation fee of \$33.47 per trip. The analogous payments in Puntarenas are substantially higher. Table 3 provides a side-by-side comparison of the relative contribution of similar cruise ships versus cargo ships to the local port authority in Puerto Limon and Puntarenas. It shows that cargo ships in Puerto Limon pay almost twice as much to the port than cruise ships under the current fee structure, while cargo ships pay about seven times the fees paid by cruise ships in Puntarenas.

The ship may purchase supplies while in port, may add or exchange employees, or may require special services for employees. Since Costa Rica is known for the quality of its dental care, there is some, if not a huge amount of, activity in the local provision of these services to cruise ship employees. Similarly, the ships may or may not purchase water locally at a rate of \$10 per tonne in Limon or \$2.58 per tonne in Puntarenas (200-400 tonnes per ship). Ships tend not to purchase fruits and vegetables locally, since Costa Rica is not among the cheapest locations for such items in the region, despite its position as a major exporter of bananas and other fruits.

Job quantity versus job quality is a consistent challenge of economic development. This can particularly be the case with nonconsumptive natural resource based industrial development like tourism, where many of the jobs created are in the service and retail trade sectors. In an analysis of the contribution of cruise ships to the Alaskan economy, McDowell (2000) found that the local jobs created to serve the cruise industry were 77-94% of the average private sector wages in host communities. The jobs created were primarily in the transportation, retail and service sectors.

Categories	Puerto Limon		Puntarenas	
	Cruise ships	Cargo ships	Cruise ships	Cargo ships
1) Cruise ship flat fee for services	5,864		4,800	
2) Per passenger service fees	2,090		2,500	
3) Navigation assistance fees		111		5,000
4) Demurrage fees		3,048		840
5) Dockage fee		2,175		25,500
6) Tugboat fee		9,500		13,500
7) Harbor pilot fees		33.47		2,100
Total	7,954	14,867	7,300	52,940

Table 3: Comparative charges of port authorities for cruise ships versus cargo ships, Puntarenas and Puerto Limon, Costa Rica, 2004, US\$. Sources: Puntarenas information based on information provided by INCOP in June of 2004. Puerto Limon information was provided JAPDEVA in June of 2004. Assumptions: 1000 passenger cruise ships in port for at most 12 hrs or cargo ship of 50,000 registered tonnes and 200 meters in length with 2,500 tonnes of cargo. Notes: 1) Per trip in Puerto Limon, for more than 13,000 registered tonnes in Puntarenas; 2) \$2.09 and \$2.50 per passenger in Puerto Limon and Puntarenas, respectively. 3) flat fee for > 300 registered tonnes & 0.10 per tonne in Puerto Limon and Puntarenas, respectively; 4) \$1.27 and \$0.35 per m-hr in Puerto Limon and Puntarenas, respectively; 5) \$0.87 and \$0.51 per tonne of cargo in Puerto Limon and Puntarenas, respectively; 6) \$0.19 and 0.27 pre tonne, in Puerto Limon and Puntarenas, respectively; 7) \$33.47 per trip and \$0.1002 per tonne in Puerto Limon and Puntarenas, respectively.

Cruise ships and the environment

Although it has been argued that cruise tourism offers a unique opportunity for sustainability due to its spatial confinement and predisposition to precise management, problems associated with waste generation and disposal, other pressures on fragile and unique natural environments, and social and economic impacts on host communities continue to be vetted (Johnson, 2002). Cruise tourism pollutes sea floors, harbors and coastal areas, degrades scarce water sources, destroys coral reef habitat, creates public health concerns ashore, and generates pressure on land based waste disposal sites (Uebersax, 1996 in Johnson, 2002).

Three of the four largest cruise lines have been convicted of breaking US environmental laws since 1998. P&O Princess was also convicted, but earlier in the 1990s (Klein, 2003a). In 1998, P&O Group released a corporate environmental report that acknowledged the impact of cruise liners in terms of waste generated and the percentage recycled, oil consumption and carbon dioxide emissions, ozone depletion, sulphur dioxide emissions, oil spillage, and water use

(Johnson, 2002). In 2000 the Bluewater Network petitioned the US Congress to consider cruise ships as point sources of water pollution (Johnson, 2002).

Cruise lines have paid more than \$60 million in fines over the past 5 yrs and \$90 million over the past decade for illegal dumping or concealing it (Klein, 2003a). With a few notable exceptions (one case each in Egypt, Mexico and Brazil), the enforcement of these environmental regulations has been by the United States (Klein, 2003a). In 1998 Holland America was fined \$2 million for illegal discharges of oily bilge in Alaska in 1994. Royal Caribbean was fined \$18 million for 21 felony counts of violating US water pollution laws, dumping oil and hazardous chemicals, in 1999. A \$250,000 reward was awarded to passengers of the P&O Princess cruise who bore witness to intentional dumping of plastics and other waste by the cruiseliner (Johnson, 2002).

Klein (2002) among others argues that "the cruise industry has the resources to build cleaner ships, stop dumping in coastal waters and contribute to coastal environmental protection and clean-up, but prefers to forward unenforceable vol-

untary agreements less likely to impact the bottom line if violated. They are getting a free ride..." Holland America Line has been involved in attempting to restore accidental reef damage, although there appears to be rather limited success. Unlike this case where the blame is clearly traceable to a single operator, there is little evidence of the industry addressing the more general cumulative effects of cruise tourism on the worlds' marine and terrestrial ecosystems (Johnson, 2002).

Conclusions, lessons learned and future directions

Growth in the cruise ship industry in Latin America and the Caribbean in general and in Costa Rica specifically will be accompanied with demands for investment in ports of call for these larger ships arriving in greater numbers. Such investment will create jobs and income for host communities and countries. It will also generate pollution, increase congestion, and have other social and cultural impacts in port communities and beyond. The question is whether this is the appropriate economic development path for Costa Rica and/or other countries and communities in the region to follow. McKee and Mamoozadeh (1994) conclude against the notion stating "...it seems doubtful that Third World economies should consider cruise tourism as a major factor in development plans."

The Costa Rican government has responded to growth in the cruise ship industry by designating Puntarenas and Limon as "Primary Centers of Tourism Development," providing tax holidays, infrastructure investments to separate tourism activities from cargo shipping, and other inducements to further develop these ports to accommodate cruise ship tourism. Costa Rica must seriously consider whether cruise tourism is an engine of economic development it would like to encourage or discourage based upon the following comparisons where appropriate: no cruise ships vs cruise ships; cargo ships vs cruise ships; and other tourism vs cruise tourism.

Our analysis raises the following is-

sues and concerns with investing in cruise tourism at a cost to other potential avenues of local economic development.

➤ The cruise tourism industry competes with the cargo shipping industry for port space at what appears to be a significant cost to Costa Rican ports in favoring cruise ships to cargo ships. Port fees in Limon and Puntarenas are skewed against the cargo ship industry. Charging the industry standard per passenger and the same per meter-hr rate as is charged to cargo ships would essentially equalize the payments to the port authority between cruise ships and cargo ships in Puerto Limon. The fee structure in Puntarenas is strongly skewed against the cargo ship industry relative to cruise ships and equalization appears unlikely there. Moreover, cruise tourist numbers are in decline in Puntarenas, unlike Limon, and their local expenditures are lower than their counterparts in Limon. It may be that cargo ships are a more viable long term development alternative than cruise ships in Puntarenas.

➤ Although the total tourism expenditures of cruisers may be similar to other tourists, it appears that the amount of money injected into the local economy per cruise tourist is substantially lower than for other types of tourism. Much like the reputation of land based "all inclusive" resorts, cruise companies appear to capture most of the economic returns from the cruise tourist experience, regardless of the role the local natural resource base and people might have played in it.

➤ Due to the country's relative affluence regionally, cruise ships purchase relatively few supplies in Costa Rica, mitigating potential benefits of their stop in a Costa Rican port.

➤ Cruise ships generate a great deal of human waste, water and air pollution, which can create a serious health hazard, cleanup costs, and which are not commensurate with other types of tourism development available to Costa Rica. Here again, regional, multi-national pollution policies applied to marine industries would work to mitigate these effects without harming local competitiveness narrowly defined, and perhaps enhance it considering economic development alter-

natives more broadly.

➤ Decision makers may want to consider that investment in cruise tourism friendly ports may be less efficient from a national perspective than investment in infrastructure (e.g., airports) to increase more profitable types of tourism.

➤ Leaders may want to consider the encouragement of smaller “pocket” cruises over the current cruise version of mass tourism (McKee, 1988). Such ships would probably not compete with cargo ships for port space, rather they would contribute to the increasing number of local harbors for private leisure vessels, and would potentially create more “value added” than mass cruise tourism. Current examples of pocket luxury cruises include: Abercrombie and Kent International, providing luxury nature watering trips around Antarctica; Windjammer Barefoot Cruises, small sailing yachts around the Caribbean; and Swan Hellenic historic tours with lectures around the Mediterranean.

The importance of the cruise industry to the economies of Central America and the Caribbean is undeniable. The questions surrounding the benefits and costs of such development are similarly undeniable, yet relatively site specific and poorly understood. This work has raised many of the important questions and provided some potential answers with sufficient empirical support to demand consideration by policy makers and researchers alike. We hope that subsequent work can provide greater precision and application in responding to the question of the efficacy of cruise tourism as an engine of community economic development in this region.

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