
Cruise tourism: economic, socio-cultural and environmental impacts

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Abstract: Cruise tourism generates an estimated \$18 billion a year in passenger expenditure and has been the fastest growing sector of the travel industry in the last years. Arrivals in the Caribbean region increased from three million in 1980 to more than 25 million in 2007. In this paper we describe the evolution of the cruise industry and review the experiences of different cruise destinations. We also describe different activities associated to the cruise ship industry to identify costs and benefits for the actors of the local economies.

Keywords: cruise industry, economic impact, environmental impact.

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1 Introduction

Leisure cruising today is completely different from the picture that we have from this activity in the 1970s. In the early days, casinos, shore excursions, port lectures, shopping programs, spa services were inexistent. The sector has evolved from a very small part of the oceanic passenger industry into a complete and complex vacation business, including all the different sectors of the travel industry. It is well-known that cruise industry has been experiencing an important expansion in the past 20 years. Cruise tourism can be traced back to the beginning of the 1960s coinciding with the decline of transoceanic ship travel and the introduction of the first non-stop air travels between the USA and Europe. The 1970s and 1980s were a period of moderate growth, increasing from half a million passengers in 1970 to 1.4 million passengers in 1980 and 3.8 million passengers in 1990. In the 1990s this kind of leisure tourism reached Europe, Asia and Oceania and started a period of high growth. Currently, there are more than 30 ships scheduled to join the global fleet over the next four years representing investments over US\$ 20 billion. North Americans represent more than 80% of all worldwide market but, according to some experts, European and Asian markets promise great possibilities of growing. The participation of the cruise sector in the international worldwide tourism corresponds to 1.6% of the total tourists and 1.9% of the total number of nights. Revenue of cruise corporations represents the 3% of the total international tourism receipts (Kester, 2002). Even though, its relative significance in the tourism industry is still rather modest, the cruise sector is the fastest growing segment in the travel industry and has achieved to increase at almost twice the rate of land based tourism. The number of berths on offer (representing the 0.6% of the total supply of beds in hotels and similar accommodations) has increased in more than 500% between 1980 and 2007. For many destinations, in particular small Caribbean islands, cruises constitute more than 50% of the total of tourism arrivals generating important receipts through the services supplied by the port and expenditures of passengers and crew. It is expected that the cruise industry continues growing regardless of being perceived as a direct contender of sun and stay over tourism. Cruises are destinations in themselves and, viewed in this way the cruise sector is between the top ten destinations both in number of arrivals and receipts. According to Kester (2002), the average revenue per cruise trip is almost as high as the average receipts per international tourist arrivals. But the distribution of income from cruise industry is not equitable. Most ports obtain small contributions from the use of the port as a cruise destination and cruise tourism provide few real jobs and business opportunities for local residents. Cruise passengers seem to spend less than 30% of the expenditure of a land tourist. Approximately 40% of the bed days sold by the cruise industry are to Caribbean but, according to the World Travel and Tourism Council, 'the economic contribution of cruise tourism to the Caribbean economies is arguably negligible' [cited by Klein (2005a)]. From the other hand, most cruise ships are registered in a country offering a 'flag of convenience' like Bahamas, Panama, or Liberia. As foreign corporations, cruise lines avoid taxation, labour laws, environmental standards, etc. Flags of convenience also restrict the rights of workers and are used to pay low wages.

As ship order books and passengers number grow, so do significant impacts at different levels: socio-cultural, economic, politic and environmental. There are few researches concerning the effects of cruising in destinations, particularly those related to cost-benefits analysis of the cruise industry activity. Furthermore, it is uncertain whether major players in the cruise industry (local governments, population, shore operators, etc.)

are taking proactive measures to ensure a sustainable future for cruise tourism destinations. Although difficult to quantify, social, cultural, environmental and economic impacts, should be taken into account by decision makers in port states, particularly island ports of call. Management techniques, such as regional collaboration to levy head taxes in order to increase economic benefits and limiting total cruise passengers to reduce social impacts must be coordinated between local governments (Loper, 2005). There is a common belief that having cruise ships arriving to a destination produces a major economic impact on the local economy. This is the main argument used by policy makers to spend millions of dollars to build a cruise ship dock without knowing how many ships will arrive and its real economic impact. Because of the cruise industry's boom, many policy makers want to take advantage, and possibly this is the main reason why governments, especially in Latin America, provide surveys and data about the cruise passenger's expenditure which are not adequately justified. Ports are quick to claim that each cruise passenger spends more than \$100 during a port call, even without any serious argument. From this they simply deduce that a cruise with 4,000 passengers and 2,000 crews generates revenues for \$6,000,000. The belief that cruise passengers expenditures at port are high comes from the prototype of cruise passenger and movies related to cruises in the 1970s. Also the 'Love Boat' television series contributed to create this image of cruises. In the 1920s cruising was the preferred mode of travel for the world's social elites. This believe do not take into account that cruises today are accessible to almost everyone and that some type of cruising must be considered part of the low cost tourism. On average, cruise passengers today have even less income than those who cruised in the 1980s. In any case, between the very few studies on cruise passenger expenditures, a 1994 study commissioned by the Florida-Caribbean Cruise Association found passengers spent on average \$89.72 per passenger per port in the Caribbean region (Klein, 2005a). Nevertheless the big fraction of income generated by the cruise activities remains to the cruise companies, ports have still some profits. But at the same time they also obtain costs and problems associated with the arrivals of ships, cruise passengers and crews. This part of the story is even more unknown than the amount of money that a cruise passenger generates as income for a local economy.

The next section of this paper presents an overview of the cruise industry presenting some data which permit us to analyse its growth, describe the market of cruises and compare different destinations. In Sections 3 to 6 we describe the impacts generated by cruise ship activity at different levels: socio-cultural, economic, politic and environmental. We also include a description of taxes and subsidies applied to the cruise industry- and we compare different destinations. Conclusions and future development are in the last section.

2 Overview of the cruise sector

2.1 The cruise industry growth

The cruise ship industry has been the fastest growing segment in the travel industry around the world. The growth of the industry can be measure from different sides. In particular, economists are interested in measuring supply, demand and output of the sector. Cruise passengers number is usually cited as a measure of demand (Bull, 1996).

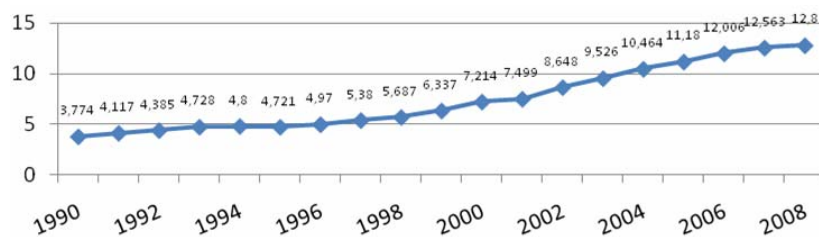
Table 1 and Figure 1 show the cruise passenger arrivals and the growth of the number of passengers for the period 1990–2007.

Table 1 Cruise passengers arrivals, 1990–2007

	<i>Total (million)</i>	<i>North American</i>	<i>Others</i>	<i>North Americans (%)</i>	<i>Annual growth rate (%)</i>
1990	3.774	3.496	0.278	92.63	9.10
1991	4.117	3.834	0.334	93.13	9.09
1992	4.385	4.023	0.362	91.74	6.51
1993	4.728	4.318	0.41	91.33	7.82
1994	4.8	4.314	0.49	89.88	1.52
1995	4.721	4.223	0.5	89.45	-1.65
1996	4.97	4.477	0.49	90.08	5.27
1997	5.38	4.864	0.52	90.41	8.25
1998	5.687	5.243	0.62	92.19	5.71
1999	6.337	5.690	0.65	89.79	11.43
2000	7.214	6.546	0.67	90.74	13.84
2001	7.499	6.637	0.86	88.51	3.95
2002	8.648	7.472	1.176	86.40	15.32
2003	9.526	7.990	1.536	83.88	10.15
2004	10.464	8.870	1.590	84.77	9.85
2005	11.18	9.671	1.509	86.50	6.84
2006	12.006	10.078	1.928	83.94	7.39
2007	12.563	10.247	2.316	81.56	4.64

Source: CLIA (2008)

Figure 1 The growth of the number of international cruise passengers (see online version for colours)



Source: CLIA (2008)

The average annual growth rate in the number of worldwide cruise passengers for the period 1990–2007 was 7.4%. Note that the participation of North American passengers is high (more than 80%) but decreasing. Then much of the growth of the industry is due to the development of demand from new sources as Asia and Europe. As reported by CLIA (2008), only 20% of North American people have cruised and more than 50 million of them express interest of cruising within the next three years. Then, the prediction is that

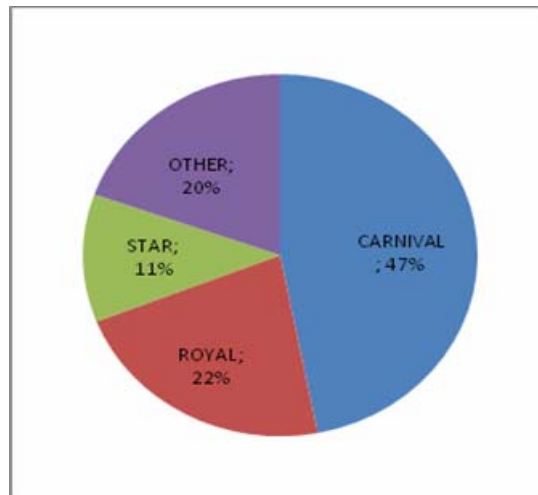
the number of cruise passengers will continue growing in the next future. Berths available and the number of ships (Fells, 1995; Peisley, 1995) are measures of supply. In particular, berths are a standard measure of capacity, which assumes that two persons can occupy each cabin. A berth, then is the number of cabins times two (see Table 2 and Figure 2).

Table 2 Cruise lines market share (measures of supply)

Company	Revenue (2006)	Passengers (millions)	Passenger growth	No. of ships	Berths
CCL	\$11,839	6.6	14.9%	81	143,676
RCI	\$5,230	3.6	5.9%	34	67,550
SC	N/A	N/A	N/A	21	35,000
Industry	\$27,000	12.6	7.8%	231	306,000

Source: [http://www.wikinvest.com/stock/Royal_Caribbean_Cruises_\(RCL\)](http://www.wikinvest.com/stock/Royal_Caribbean_Cruises_(RCL))

Figure 2 Market share of the cruise industry in 2006 (see online version for colours)



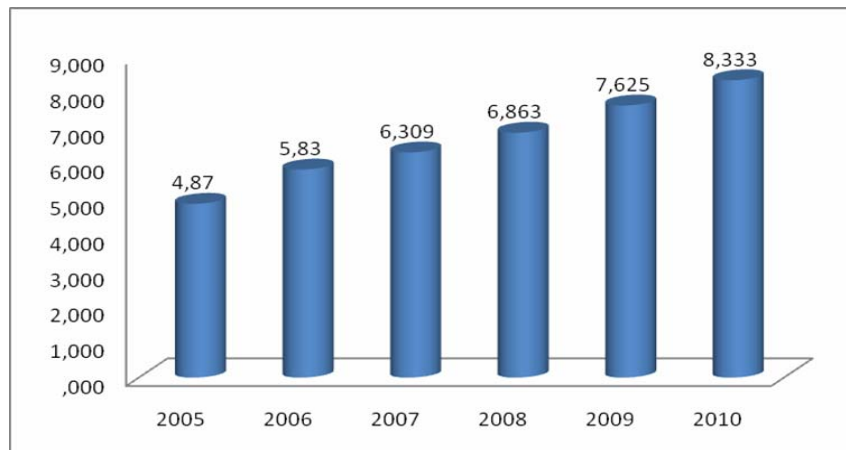
Note: Royal Caribbean International (RCI), Carnival Cruise Lines (CCL) and Star Cruises (SC) have 80% of the market.

Source: [http://www.wikinvest.com/stock/Royal_Caribbean_Cruises_\(RCL\)](http://www.wikinvest.com/stock/Royal_Caribbean_Cruises_(RCL))

Passengers day and passengers expenditure are the main output measurement of the cruise industry. Average expenditure per person by port is usually computed from questionnaires and the quality of this data is not always of good quality. In any case, the amount depends on the destination and on the category of the port. For example, as reported by the Florida-Caribbean Cruise Association (FCCA), during the 2005–2006 cruise years the average per cruise passenger spending per port-of-call was \$98.01, and average spending per port-of-call by crew members was \$74.56. By the contrary, the expenditures at other ports in the Caribbean are usually not available. Figure 3 shows the growth of the total direct expenditures of passengers and crew. The average annual growth rate is 10%. From the other hand, the number of passengers' day is normally well informed. Table 3 shows the evolution of the number of passengers' day for the main cruise destinations.

Table 3 Evolution of the top ten cruise geographical destination (total of bed days in millions of passengers)

<i>Region/year</i>	<i>2000</i>	<i>2001</i>	<i>2002</i>	<i>2003</i>	<i>2004</i>	<i>2005</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>
1 Caribbean	21.51	21.83	26.74	29.00	31.21	31.45	31.96	32.16	30.79
2 Mediterranean	6.28	7.55	6.50	8.15	9.70	9.74	10.50	14.75	16.27
3 Europe	3.75	4.84	6.92	7.72	7.56	5.52	6.80	6.80	7.59
4 Alaska	4.20	4.70	5.05	5.27	5.91	6.42	6.36	6.93	6.97
5 Mexico West	2.68	1.17	3.39	3.39	4.83	5.76	5.21	5.95	6.45
6 Bahamas	3.20	4.70	2.88	3.31	3.66	4.40	6.07	4.63	3.48
7 South America	0.83	1.42	1.40	1.65	1.09	1.42	1.45	2.13	2.68
8 South Pacific	1.16	1.16	0.84	1.10	0.68	0.66	1.45	1.01	1.99
9 Canada/New England	1.11	1.14	1.15	1.11	1.49	1.17	1.23	1.63	1.91
10 Bermuda	0.99	1.27	1.23	1.48	1.32	1.33	1.39	1.29	1.27
Total	45.687	49.772	56.085	62.17	67.458	67.859	72.419	77.271	79.384

Figure 3 Cruise passengers and crew direct expenditures 2005–2008 and projection for 2009–2010 (in millions of US dollars) (see online version for colours)

Source: FCCA (2008b)

As reported by the Cruise Lines International Association (CLIA), since 1990, over 128 million passengers have taken a 2+ day cruise. Of this number, over 70% of the total passengers have been generated in the past ten years and nearly 44% in the past five years (FCCA, 2008). The cruise industry is one of the main sectors for the development of the Caribbean regions. The consumer demand exceeded the ability of supply, despite the fact that new vessels have been introduced. Cruise ships arriving are increasing both in number of passengers and size of the ships, conditioning the choice of location. The industry is also booming in Asia, Australia and Europe. The UK, Germany and Italy are experiencing considerable growth in the popularity of cruising and there is also significant development in Spain but less in France (Klein, 2003).

In 2007, Cruise Lines International Association members carried 12.56 million worldwide passengers, an increase of 4.1% over the previous year. For that period, 10.25 million Americans took a cruise vacation representing 82% of the total (Table 1). It is estimated a demand of 28 million for the next three years. Since the 1990s, the cruise industry has become highly concentrated. The world market – Caribbean, Alaska, Europe and the Far East – is dominated by a handful of large players (see Table 2). Caribbean market operation is controlled by Carnival Corporation with 47%, while Royal Caribbean Cruise Line has 22%, then we have Star Cruises with a 11% of the market share. In Alaska, these three groups assume the 96.8% of market share; in Europe, 41.1%; in the Far East, 7.5%. The rest of the market is shared between vessels from United States, Canada, Europe and some of Asia (in less proportion). It can be mentioned Clipper Cruises, Disney Cruises, Festival Cruises, Fred Olsen or Indian Ocean Cruises. Ports compete hard to attract operators like these. These operators then exploit their economic clout to drive a hard bargain with home ports, ports of call and agencies.

Table 4 Size and building cost of ships by major cruise corporations

<i>Carnival Corporation</i>				
<i>Year</i>	<i>Ship</i>	<i>Gross tons</i>	<i>Lower berths</i>	<i>Cost</i>
1972	Mardi Gras	27,300	1,024	-
1982	Tropicale	36,674	1,022	\$100 m+
1990	Fantasy	70,367	2,044	\$225 m
1996	Carnival Destiny	101,353	2,642	\$350 m
2003	Pinnacle Class	150,000	2,620	\$450 m
<i>Royal Caribbean Cruise Line/International</i>				
<i>Year</i>	<i>Ship</i>	<i>Gross tons</i>	<i>Lower berths</i>	<i>Cost</i>
1970	Song of Norway	18,000	724	\$13.5 m
1988	Song of America	23,000	1,004	\$140 m+
1990	Sovereign of the Seas	73,192	2,278	\$150 m
1999	Voyager of the Seas	142,000	3,114	\$500 m
2006	Freedom of the Seas	160,000	3,600	\$750 m

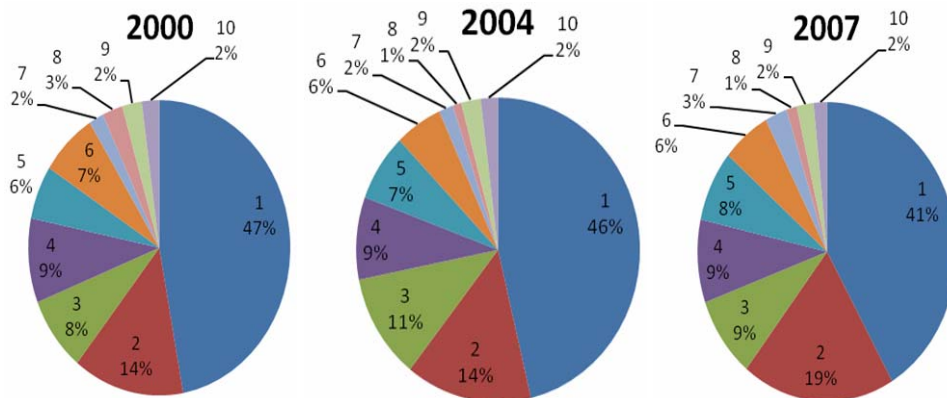
Source: Klein (2005a)

There are many factors that contributed to the increase of the cruise industry. In 1972, Carnival introduced the concept of ‘Fun ship’ involving the creation and promotion of cruises as mass tourism (Dickinson and Vladimir, 2007). Another important factor in the growth of the cruise sector is the increasing size of new ships. The parade of the new larger ships began with the debut of Cunard’s Queen Mary 2 in 2004 at nearly 150,000 gross tons. This was followed by Royal Caribbean’s new Freedom Class of ships Freedom of the Seas (2006), Liberty of the Seas (2007), Independence of the Seas (2008), each having a gross tonnage of 158,000 tons. The Freedom of the Seas carries 4,370 passengers and crew. Royal Caribbean with its project Genesis is planning to build on 2010 a cruise ship of about 220,000 gross tons and the new generation of cruise liners after Genesis could each carry up to 12,000 passengers (Hickman, 2006). As can be noted in Table 4, ships are built bigger, faster than ever and cruise passengers can find all

unimaginable onboard attractions, including even golf simulators, ice-skating rinks, planetariums, boxing ring, among others.

Nowadays, there are more than 30 ships scheduled to join the global fleet over the next four years representing investments over US\$ 20 billion. Although cruise lines offer service on every continent, more than half of the global fleet operates in the North American market, with the major US ports of call located in Florida, Alaska, Texas, California, Louisiana, New York, Puerto Rico, and, some-what surprisingly, Massachusetts. The Caribbean region, continue being the most preferred cruise destination, in particular during the winter months of the north hemisphere. In summer cruise lines include destinations that are not included during winter, as the Mediterranean (the most popular destination in this season), Alaska and North Europe. According to FCCA (2008a) statistics, the ten top cruise destinations are the Caribbean, the Mediterranean, Alaska, Europe, west coast of Mexico, Bahamas, South America, the South Pacific, Canada and Bermuda. Together these destinations account for more than 85% of the market, including Transatlantic and Transpacific cruises. The Caribbean accounted for 41.62% of all itineraries in 2007, Mediterranean for 19.08%; Alaska and West Mexico 7.77% and Europe 8.79%. Figure 4 shows the distribution of cruise passengers according to geographical destinations. Note that the Caribbean fraction of the market is decreasing from an initial 47% in 2000 to a share of 41% of the market in 2007. The participation of the Mediterranean increases from 14% of the market in 2000 to 20% in 2008. Alaska and Europe have an almost constant portion of the cruise market of around 8% and 9% respectively.

Figure 4 Evolution of the market share for the top ten cruise geographical destinations (see online version for colours)



Notes: Caribbean (1), Mediterranean (2), Europe (3), Alaska (4), Mexico-West (5), Bahamas (6), South America (7), South Pacific (8), Canada-New England (9) and Bermuda (10)

Source: CLIA (2007)

Consumer interest in cruising continues being strong despite downward pressure on travel in general due to the economy and fuel costs; 77% of past cruise vacationers and 55% of vacationers who have not taken a cruise, expressed interest in doing so within the next three years. All over the world, but especially in the Caribbean region, local governments are investing large amounts of money in high quality infrastructures to

attend the colossal ships and thousands passengers arrivals. Other governments are so enthusiastic with cruise ships arrivals that justify it more as a marketing strategy than an economic profit. Others, like Panama, encourage cruise lines paying them a monetary incentive for each disembarked passenger.

2.2 The market of cruises

Cruises represent the paradigm of globalisation: physical mobility, international capital that can be relocated anywhere and at any time, crews coming from different countries at the same ship (e.g., Table 5 shows the nationalities of the workers of Carnival Cruise Lines in 2000 divided by different jobs), no national or international regulations, marine registrations optimally selected.

Table 5 Carnival vessel's workforce nationalities in 2000

<i>Job</i>	<i>Nationalities</i>
Engine rooms	Perú, Uruguay, Philippines, Romania, Chile, Colombia, Costa Rica, El Salvador, India y Nicaragua
Bar Staff	Asia, Eastern Europe (21 m and 24 w). Caribbean and Central America (8 men)
Hotel Stewards	Asia, Caribbean , Central America (54 men). Trinidad Y Colombia (2 women)
Cabin Stewards	Asia, Caribbean , Central America y Croatia (46 men)
Gallery Stewards	Asia, Caribbean , Central America y Perú (50 men)
Laundry	China (12 men)

Source: Based on data from www.waronwant.org (Sweatships)

Table 6 North American Companies Capacity in 2007

<i>Cruise company</i>	<i>No. of lowers</i>	<i>No. of ships</i>
Royal Caribbean International	52,838	22
Carnival Cruise Lines	50,882	22
Princess Cruises	34,111	16
Norwegian Cruise Line	25,326	12
Costa Cruise Lines	23,265	12
Holland America Line	18,915	13
MSC Cruises USA	13,548	8
Celebrity Cruises	13,388	8
Cunard Line, Ltd.	6,411	3
Hurtigruten	5,923	13
Other Companies	19329	56
Total	263,936	185

Source: Cruise Lines International Association (2007)

Globalisation of the sector has led up to a higher internationalisation of the owners and has helped to the concentration of the sector reducing the number of operators to three main players. Table 6 shows the size of the different companies in the North American

cruise industry, measured by number of ships and number of lower berths. To be in equilibrium with North American demand, the average rate of growth of the cruise capacity from 1981 to 2007 was 7.6%.

There are strong barriers to ingress in the cruise market like license restrictions, heavy capital requirements, increasing economy of scales. Therefore, the cruise market has an oligopolistic structure where major companies dominate the supply of the sector (see Table 2 and Figure 2). These companies strategically make capacity investment decisions in order to block entries by new competitors, to increase the market share and inducing new demand. To author's best knowledge, there are a few theoretical analyses of the oligopolistic structure of the cruise market. For example, see Wie (2003) where the oligopolistic competition is modelled as a N-person nonzero-sum non-cooperative dynamic game. As it is well known two strategies are available for the members of an oligopoly: competition and cooperation. Cooperation between cruise companies is represented by international association like CLIA, PSA, but the economic growth of this association is mainly limited to the promotion of cruise activity. Competition between cruise lines is represented by product differentiation and marketing strategy. Carnival differentiates its products as a low cost firm while Cunard offers a luxury product. These are examples of quality differentiation of the product. Companies also differentiate its product by diversifying it to attract the specific market segment which they are interested in. For example, Princess Cruises is specialised in weddings, Celebrity Cruises has been recognised for the best food and Royal Caribbean Cruises for the best facilities; Costa Cruises has the best European style; the best private island is property of Holland America and then it is Walt Disney with an extension of the famous Orlando Park. World Cruising Club operates the Classic Malts Cruising covering two weeks of sailing on the west coast of Scotland to visit the most important Scottish whisky distilleries (McBoyle and McBoyle, 2008).

3 Economic effects

Cruise tourism expenditure has direct, indirect and induced effects on the economy of a destination. The direct effect is on a supplier who sells goods and services directly to cruise vessels, cruise passengers and crew. Expenditures related to cruise vessel include port costs, marine expenses, food and beverages, fuel, water, maintenance. Cruise passengers expenditures include those that are not part of the cruise itself, such as taxis, souvenirs, shore excursions, food and beverages, etc. Crew expenditures include restaurants, retail goods, recreational activities, transport, etc.

Indirect effects result from the purchases of direct suppliers like goods from other companies. Induced effects arise from the expenditures of direct and indirect recipients produced from their increased incomes.

It is not an easy task to measure direct and indirect effects of cruise activity. As described by Braun et al. (2002), one of the main difficulties lies in the fact that many cruise lines sail under flags of convenience and employ worldwide crews coming as indicated in Table 5. Most cruise ships are registered in the Bahamas, Liberia or Panama.

Dwyer and Forsyth (1988) develop a framework for assessing the economic impact of cruise tourism for a nation and its sub regions. See also Table 3 in that paper for classification details of cruise expenditure. According to CLIA (2007) the major economic impacts of the US cruise industry during 2006 included the indirect economic

impacts, the expenditures of the cruise lines and their crew and passengers was responsible for the generation of \$35.7 billion in gross outputs, a 10.2% increase over 2005. This, in turn, generated just under 348,000 jobs throughout the country paying a total of US\$ 1.7 billion in wages and salaries. These total economic impacts affected practically every industry in the USA: nondurable goods manufacturing, professional and technical services, travel services, durable goods manufacturing, financial services, airline transportation and wholesale trade.

Economic contribution of the cruise industry depends on the category of the port: homeport or port of call. A home port is a destination from which ships begin and end. While a port of call is just an intermediate stop. Normally, a cruise passenger spends less than ten hours in a port of call.

The cruise business has in a homeport like Miami, Port Canaveral, among others, direct impacts on almost every segment of the travel industry: transport, hotels and resort, restaurants, attractions, etc. A large portion of cruise passengers spend a night or more in the destination while they wait to embark. For instance, In Seattle the average is 1.6 nights spending \$63 per passenger per night (Klein, 2005a).

The size of the destination influences the intensity of economics effects of the cruise activity. In an earlier paper, focusing on the effects of cruise ships on small island nations (McKee, 1988), shows that the economic impacts are destination-specific and that smaller host territories may better served by concentrating upon luxurious vessels.

A cruise ship represents all four faces of the tourism industry: transportation, accommodation (including food and beverages), attractions and tour operators. In this sense, cruise ships are also direct competitors of the major land based resorts as Cancun, Cozumel, Orlando, Las Vegas, etc. Seidl et al. (2006) note that the case for Costa Rica, the season peaks of cruise tourism and other form of tourism occurs at the same time putting cruise passengers in direct competition with other tourists for the same touristic goods. In taking people to various destinations the cruise ships are a substitute for air travel. As floating hotels, they offer accommodation services. More and more, cruise ships features as resorts and it is well known that a substantial minority of cruise ship passengers do not even disembark in the different port destination that are visited.

Given the recent boom of the cruise industry activity it is difficult to find data to analyse the economics of cruise tourism. Most works today has been based on observational data. Dwyer et al. (2004) and data collected by cruise lines provide estimates of cruise-related expenditure using data for Cairns in Far North Queensland but they advise that their results must be regarded as tentative because they do not have the required data.

Chase and Alon (2002) introduces a Keynesian model to evaluate the impact of cruise tourism and tests it on the economics of Barbados, but using data of tourist expenditures instead of cruise passenger's expenditures.

Cruise data are scarce and not homogenous. The best data bases are from North America, the Caribbean and Oceania. For destinations outside the Americas and Oceania it is, even, very difficult to approximate the number of cruise passengers. This is the reason why most of the empirical studies refer to destinations in those mentioned regions. The paper by Ikeda and Jaswar (2002) present a prediction method of travel demand of cruise ships in Japan. It is one the few empirical studies using data from an Asian destination.

One of the main differences between cruise tourism and traditional tourism is that factors of production of the cruise industry can be acquired from a range of countries.

Normally, a tourist destination capital can be sourced internationally but the other factors inputs are obtained from the tourist destination country. No such limitations apply to cruising. Cruise companies can operate as multinational firms where resources do not need to be acquired from a specific country.

The cruise industry has the potential to provide economic benefits to a port state. However, accommodation of large cruise ships into port requires a great deal of initial capital investment in infrastructure as well as maintenance costs. As cruise ships continue to grow larger, further investment may be required. Under these types of tourism scenarios with high infrastructure or environmental costs, rapid growth of tourism may result in a stagnation of or even a decline in GDP [see Gooroochurn and Blake (2005), Nowak et al. (2003) and Nowak and Sahli (2007)]. Without significant foreign investment into this infrastructure, it is questionable whether construction of large cruise ship terminals could pass a cost-benefit analysis. In the next subsections we describe some negative impacts of the cruise activity.

3.1 *Cruise lines*

Among the reasons that can explain the spectacular growth of the industry, can be mentioned the price of the packages. Recently, cruise lines have designed short duration cruises. Package of two or three nights which people can take a cruise ship from Miami to Bahamas or Barcelona to Palma (Majorca). These kinds of cruises are addressed to an increasing target: younger and more active passengers. Table 7 shows prices of packages that cost less than \$100 per day.

Table 7 Prices of some short duration cruises

<i>Home port/ship</i>	<i>Route</i>	<i># Nights</i>	<i>Price (US\$)</i>
Miami/Majesty of the Seas	Nassau (Bahamas) and Coco Cay (Bahamas)	3	100
Miami/Norwegian Sky	Grand Bahama Island (Bahamas), Nassau (Bahamas) and Great Stirrup Cay (Bahamas)	3	189
Miami/Norwegian Pearl	Roatán (Honduras), Belize, Cozumel (México) and Great Stirrup Cay (Bahamas)	7	489
Miami/Liberty of the Seas	Cozumel (México), Grand Cayman y Ocho Rios (Jamaica)	7	500
Aruba/Ocean Dream	Curacao, Isla Margarita (Venezuela) and Mayreau (Granadinas)	7	559
Liberty of the Seas/Miami	Cozumel (Mexico), Grand Cayman and Ocho Rios (Jamaica)	7	500
Liberty of the Seas/Miami	San Juan (Puerto Rico), Saint Thomas (Virgin Islands) and Saint Marteen	7	500

Source: Based on data from www.eltiempo.com (Section Travel)

Another reason of the growth of the success of cruises is the fact that usually the ship itself is the major tourist attraction. A considerable portion of the cruise passengers do not disembark because they have the enough facilities to entertainment on board.

Arguably, cruise lines are the most benefited with the activity. More than 50% of land-based activities are sold on board by themselves. From the value paid by cruisers for on shore activities, the local tour operator receives between a 50% and sometimes 25% of that value. Tourism service providers who want to appear in advertisements delivered on board (videos, brochures, etc.) have to pay for it. There is a high cost of participation in the most important annual industry event. The range goes from \$16,500 including registration and booth (Klein, 2005a).

Continuing with the benefits to cruise ship companies, there is a figure designed by them: 'the dream islands'. These territories are private islands property of each cruise line, eight in the Caribbean (Disney Cruises has Causeway Cay, Norwegian Cruise Line owns Great Stirrup Cay and Royal Caribbean owns Coco Cay). This clearly reduces the economic benefit to communities not to disembark at the destination. There are no profits for the chain of local tourism and cruise lines obtain all incomes, from rental of aquatic equipment, food and beverages to souvenirs that are sold to passengers on board. Like any great business, cruise industry, is a strong lobbying group of lawmakers in port destination (homeports and port of calls). Table 8 describes the amount of cruise industry spending on lobbying the US Congress. It was also noted that power with the participation of the Carnival Corporation as a partner of the firm Puerto Cancun-Xcaret, SA de CV, whom the Mexican government gave the construction and operation of a terminal for big ships. The fact generated a heated debate.

Table 8 Total reported cruise industry spending on lobbying the US Congress from 1997 to 2007

<i>Cruise line</i>	<i>Total (US\$)</i>
Carnival	536,000
Royal Caribbean	1,160,000
Norwegian Cruise Line	2,770,000
Holland America	750,000
CLIA (Cruise Line International Assoc.)	10,017,807

Source: Adapted from <http://www.cruisejunkie.com>

3.2 Wholesaler receptive tourism operator

These companies are able to underbid, then so, they dominate the operation of tours and shore excursions in the port destination. Small local tourism operators and providers not only resign themselves to profit what the cruise line deems fit, but they would have to deal with displeased passengers. These operators prefer not to vie with cruise lines for fear of losing the small part of the business that they share. In addition, one of the risks that they have to take is the fact that passengers buy their excursions two days or even one day before arrival in port, this involves not to get the passengers they were expecting. It could be more or it could be much less. An attraction will therefore not know if they are going to receive 30 or 300 passengers until the day before or even on the morning arrival. A coach company will not know whether one or six coaches are required (McKenzie Wilson Network Partnership Group, 2004).

3.3 *Hotel sector*

Cruise sector causes apprehension to hotel managers for reasons as the non-payment of taxes compared with those who pay these entrepreneurs. In Aruba, hotels and operators feel that their traditional packages lose ground to ships scheduled. With regard to these disagreements, Manuel Butler Halter (expert from the WTO) states that cruise sector growth and traditional tourism sector are not irreconcilable if they develop diversification and motivation policies in destinations. It also mentioned the essential benefits for the destinations where cruise ships arrivals, including:

- a expenditures on destination: form of purchases, excursions and hotel nights in home ports
- b importance and benefits for the local commerce
- c desire to at least 50 percent of total passengers arrived to return by other means of transport
- d in ports: expenditures, investments in terminals and basic element in the policies of the city (SECTUR, 2003).

4 **Environmental effects**

Other critical effects are the environmental impacts. As ship order book and passenger number grow, so do cruise impacts on the environment and local communities. Johnson (2002) exposed the environmental cruise tourism impacts identified by a study of British Airways in Seychelles:

- 1 Modifications to the natural and built environment to enable destinations to serve as a cruise line destination involve loss of natural habitat, exploitation of local construction.
- 2 Operational impacts related to the use of energy, water and those such as antifouling and accidental or deliberate physical damage to marine ecosystems.
- 3 Impacts associated with transferring people to and from departure and destinations points; it increases the use of air travel.
- 4 The impacts of recreational activities on wildlife such as disturbance and littering, and pressures on endangered species though exploitation for gifts and curios.

The environmental costs of the sector are incalculable due to the cruise industry it is, in general terms, an unregulated activity. Furthermore, it is difficult to gauge widely its impacts, despite enforcing environmental standards for the industry. One US-based civil society group, Bluewater, describes cruise ships, which can carry as much as 5,000 passengers and crew, as 'floating cities' producing large volumes of waste. Table 9 resumes the different types of waste and damage produced by a typical ship of 3000 passengers. All of them are included in the Protocol 1978 known as MARPOL 73/78 (Copeland, 2008).

These environmental impacts are mainly generated in coastal areas close to the busiest port destinations, including Miami, Nassau, Alaska, Cozumel, among others.

Following Copeland (2008) one of the difficulties in implementing MARPOL arises from the diversity of 'flag states' in which cruise ships are registered. Despite port destinations can perform its own inspection to verify a ship's compliance with international standards, most of the time they do not have an appropriate infrastructure.

Table 9 Type of waste and damage produced by typical 3,000 cruise passenger ship

<i>Type of waste</i>	<i>Description</i>	<i>Damage for a large ship with 3,000 passengers</i>
Blackwater	Is sewage, wastewater from toilets and medical facilities, which can contain harmful bacteria, pathogens, diseases, viruses, etc.	15,000 to 30,000 gallons per day
Graywater	is wastewater from the sinks, showers, galleys, laundry, and cleaning activities aboard a ship	90,000 to 255,000 gallons per day
Solid waste	Includes glass, paper, cardboard, aluminium and steel cans, and plastics	24% vessel worldwide (by weight) comes from cruise ships
Hazardous wastes	Includes discarded and expired chemicals, medical waste, batteries, fluorescent lights, and spent paints and thinners, among others.	Quantities are small, their toxicity to sensitive marine organisms can be significant
Bilge water	Contains solid wastes and pollutants containing high amounts of oxygen-demanding material, oil and other chemicals.	An average of 8 metric tons of oily bilge water for each 24 hours of operation.
Ballast water	Often contains non-native, nuisance, exotic species that can cause extensive ecological and economic damage to aquatic ecosystems	Is little cruise-industry specific data on the issue.
Air pollution	Generated by diesel engines that burn high sulphur content fuel, producing sulphur dioxide, nitrogen oxide and particulate, in addition to carbon monoxide, carbon dioxide, and hydrocarbons.	Again, there is little cruise-industry specific data on this issue

Source: Own compilation adapted from The Ocean Conservancy (2002)

Much of the protesting against the cruise industry originates in the USA, the biggest market and where major owners of cruise lines are headquartered. Several environmental groups have been persistent in their attempts to get the industry to act more responsibly. There is little evidence that cruise companies are tackling the effects of cumulative environmental impacts. Table 10 shows some fines paid by cruise lines for breaking environmental laws.

Some suggestions have been presented (The Ocean Conservancy, 2002) to regulate cruise activities, including: reducing and regulating cruise ship discharges to improve the water; improving monitoring and inspection; strengthening enforcement mechanisms; training programs, and so on. Following Johnson (2002), he describes one of the few cases which marine damage was attributable to a cruise line, it was Holland American Line. They developed an ecological project, is the rehabilitation of Cayman coral reef ecosystem by. They carried out a successful restoration that involved salvaging damaged reef fragments, removing rubble, reattaching living corals and monitoring.

Table 10 Fines paid by cruise ship companies

<i>Cruise Line</i>	<i>Fines (US\$)</i>	<i>Violation</i>
Holland America (1998)	\$2 million	Oily bilge water in Alaska's Inside Passage.
Royal Caribbean (1998)	\$9 million	Falsifying records of oily bilge discharges in Florida and Puerto Rico.
Royal Caribbean (1999)	\$18 million	21 counts of dumping oil, dry cleaning fluids, etc., in US Coast Guard.
Royal Caribbean (2000)	\$ 6.5 million	Dumping toxic chemicals and oil-contaminate into the Alaska's waters.
Carnival Corporation (2002)	\$ 18 million	Dumping oily waste from five ships and admitted that employees made false entries in record books from 1998 to 2001.
Norwegian Cruise Line (2002)	\$ 1.5 million	Discharging oily bilge water and other waste from two ships. The fine was considered lenient.
Carnival Cruise Line (2003)	\$200.000	Noncompliance with California state ballast water law.
Celebrity Cruises (2006)	\$100.000	Dumping 500,000 gallons of untreated wastewater into Puget Sound (Washington State).
Louis Cruises (2007)	\$1.57 million	Oil/fuel spill in Washington State.

Source: Based on data from <http://www.cruisejunkie.com/envirofines.html>

Another types of environmental impacts can be mentioned:

- a degradation of vegetation caused by conduct, choice of landing sites
- b its effects: Erosion, destruction of plants
- c degradation of historical sites caused by conduct, overuse, collection of artifacts; physical and visual impacts are the main effects
- d degradation of geological sites caused mainly by conduct producing physical and visual impacts.

In each destination there is an outer space waiting to be affected by the arrival of the millions of cruise passengers around the world: An archaeological heritage, a natural reserve, a barrier reef, a national park. This issue has, of course, its defenders, who are questioning permanently the value of the economic development that can be reached by scarifying these spaces

5 Social and cultural effects

Cruise ships are between the most preferred types of vacation space. In this sense, it is important to understand what occurs in a vacation space. Specifically, in the space where coincides cruise passengers, stay- over tourists and residents. It has been observed that a highly concentrated tourism generates more negative perceptions from residents towards tourist. Crowds disrupt usual routing and activities associated with cruise tourism can themselves be a problem (Klein, 2005b). This situation is not only for residents but also

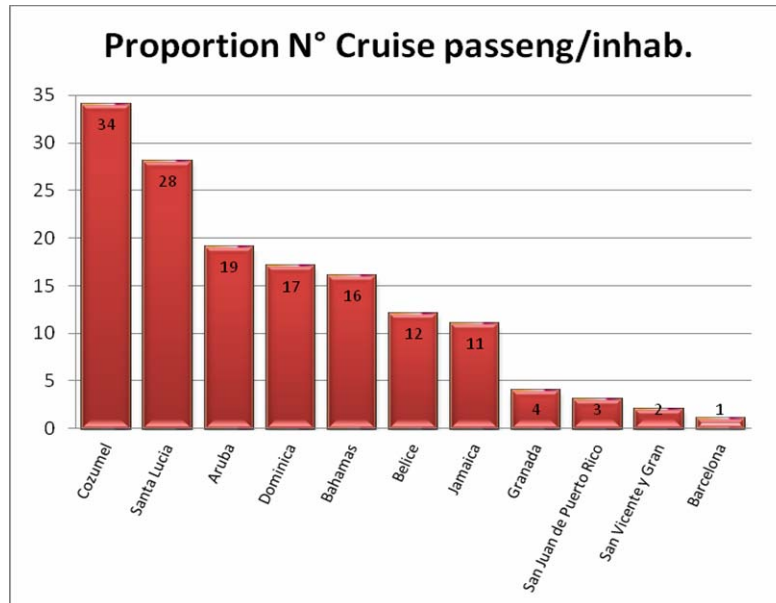
for stay over tourists who have to spend lot of time in the row to visit a monument or museum, not finding space in the discotheque. And at the end, they feel themselves confused with the horde (Jaramillo, 2001).

There is a large literature concerning the relationship between residents and guests, and how tourism impacts communities. But it is not the same to the segment of cruise ship industry, despite the strong expansion of the sector. Tourism researchers have been based, mainly, on the economic aspects; however, according to Ap (1990), during the past two decades increased attention has been focused on the social and cultural effects of tourism. Communities are constantly creating and reinventing culture in social processes; and similarly, the perception of cultural authenticity by host communities is changing (Olsen, 2002). Gibson and Bentley (2006) cited that these 'social effects are broad ranging and refer to the ways in which tourism contributes to changes in value systems, family relationships, individual behaviour, safety levels, moral conduct, collective lifestyles, creative expressions, traditional ceremonies, and community organisations'. It has been reported in some Caribbean destinations about the loss of the regional language. Local residents have been adopted habits and patterns from the visitors.

The level of satisfaction in a destination depends on the good experience that a tourist has in it. As Mannell and Kleiber (1997) affirmed, people's behaviour and experience is understood by the influence of the social situation (like the presence and behaviour of other people) and the influence of they bring to the situation. There are series of reactions triggered by the wave of cruise tourism. The competition for a space is highly noticeable in the small island destinations, where the ratio cruise tourists per resident are large (see Figure 5). This is the case for Cozumel, a Mexican Island in the Southern Caribbean coast with a population of 73,000. If they had to support, in a day, seven mega ships with twenty thousand passengers, the overcrowding would be imminent and extremely difficult to handle. Nova Scotia (a Canadian village of 120 inhabitants) experiences scarcity of a public service such as transport. In a day with a high presence of cruise passengers, the village provides 50 buses that bring congestion and pollution, and compete with pedestrian on the villager's roads (Klein, 2005b). In fact, local residents avoid the central business district while cruise ships are in port (Loper, 2005). This situation differs from ports as Miami, Barcelona and other European destinations, where the number of cruise visitors is small compared with tourists or the number of residents.

One of the services that is scarce in the competition for a space is transport (taxis and tourism buses) because cruise passengers create an artificial large demand only for some particular days. Other space is fought for the informal salespeople (mobile) who also want to benefit from the presence of the cruise passengers.

In addition to the social impacts mentioned, one special issue is highlighted: the labour issue. One of the advantages for cruise lines which sale under a FAO (Flag of Convenience) is that they do not precise to pay a legal minimum wage. There are several failed attempts brought to the US Congress. Allegations presented by the International Transport Worker's Federation-ITWF- are representative but, normally, cruise companies are treated more favourable. ITWF affirms 'Below docks on many cruise ships is a hidden world of long hours, low pay, insecurity and exploitation' (see Sweatships website). Some of them, flagged by Panama, lobbied hard to obtain an exemption of the obligation to provide a day of rest per week to workers. The racism and other forms of discrimination, rape, harassment at work, are reported globally. In fact, websites are dedicated to victims by rape, disappearances, etc. (see cruisejunkie website).

Figure 5 Proportion N° Cruise passengers per resident (see online version for colours)

Source: Own compilation based on data from CIA World Factbook 2008, Countries National Statistical Office CTO

Workers are also, charged by employment agencies with illegal fees, they pay for it with the illusion of earning money for their families (Sweatships website). Several statistics show that senior and media workers come from Central and Eastern Europe and North America. From the other hand, people of Asia, Europe, the Caribbean and the Americas only have contracted for lower rank jobs as shown in Table 5 above.

6 Taxation discussion

The economic effects of head taxes in travel and tourism have not been analysed extensively. However, head taxes are not a rarity. Among the most widely encountered head taxes in travel and tourism are entry and departure taxes employed by many countries to generate revenue from international tourism. We know little about their impact on the demand of these taxes on international travel. To date, economic analyses of tourist taxes have focused largely on the hotel occupancy (bed) tax and daily car rental tax is levied by many US localities (Mak, 2008).

There is no homogeneity on the application of taxes to cruises (see Table 11). Some ports have levy reasonable fees. For example, Alaska approved US\$ 50 divided into the following two pieces: US\$46 flat tax levied on every passenger per voyage, another US\$4 tax is levied on the cruise ship for each berth to pay for the on-board pollution monitoring Ocean Ranger program (Mak, 2008). Bermuda has levied the highest cruise passenger head tax, \$63. Some countries approve a derisory fee and, in less than a week, the decision is repealed. This is the case of Mexico, where the power of the lobbying group felt it. Starting October was repealed (not the first time) the "cruise ships levy", whereby

every cruise passenger arriving in Mexican coasts should pay a right of US\$ 5. Supported legislators argue that will continue seeking approval of this right because host communities need such economic leakage to invest in its image; further, they assert that 'if the shipping lines insist in not paying, we will explore the way to made them withholding tax' (president Tourism Commission in the Chamber of Deputies).

Table 11 A sample of cruise passenger levy

<i>Country</i>	<i>Tax (USD\$)</i>
Alaska	50
Aruba y Curazao	3.5
Bahamas	15
Belice	7
Bermuda	63
Costa Rica	2.5
Dominica	6.5
Honduras	9.5
Jamaica	2.15

Source: Klein (2005a)

Another unbelievable situation is the case of cruise lines adopting the "flags of convenience" (FAO). This cruise ships are exempt from multiple tax responsibilities and implement lenient standards of safety, undergo few environmental inspections, operating costs low, recruit staff without national or international regulations. In any case, the most unusual scene is the role played by Panama, a country that signed an agreement in 2000 with the FCCA. In this agreement the government engage to pay cruise lines for each passenger landed to 'encourage the flagging of vessels in the Panamanian flag' (CCAAIC, 2001). This incentive per passenger goes from US\$ 2.5 to US\$ 12 according to the number of visitors arriving with the ship. In consequence of the lack of a rigorous tax policy of cruise ships arrivals, there are cases where ports do not allow cruise ships to dock, unless that the industry pays an amount for local development, like Playa del Carmen (Mexico) declared. They wanted to levy a tax for US\$ 30 per each passenger disembarked in neighbour Xcaret Port. The ports and communities that receive cruise tourism are confronted with a series of hidden costs not normally take into account when making concessions in order to attract cruises. Between these costs we have:

- a the depreciation of the port infrastructure, the buses, taxis, public toilets (Klein, 2005a)
- b the cost of ensuring transport and public security in the destination
- c emergency medical services
- d the cost of enhancing streets and attractions
- e the cleaning and trash collection

- f the costs of cancelling or changing itineraries for a port [for instance, in Port Rupert (Canada) during 2004 the company Celebrity Cruises decided that from 35 arrivals programmed, 13 would merely technical calls; passengers not would disembark]
- g the damage in the long term of marine life and the cost to preserve the destination's tourism inventories.

However, currently, many of these home ports and ports of calls do not have an income that enables them to cope with the mentioned costs. Therefore, initiatives like imposing a levy cruise passengers, it be a constant fight.

7 Conclusions

Ensuring the sustainable development of a cruise destination has a very high cost. We reiterate the question: are we sure that the benefits of attracting cruises to a tourism destination are higher than the costs? Is it sure that the major players in the cruise industry, including cruise lines, local governments and population, shore operators, civil society organisations are taking proactive measures to ensure a sustainable future for cruise tourism while preserving cruise destinations?

As could be observed, there is a portion of the decision makers of destinations that pressure to promote cruise tourism but there is no policy in the local governments to control the impacts of such activity. Given this fact, an alarm signal arises. The lack of planning that allows confronting the massive arrivals of cruise tourism is the guarantee of multiple negative effects in a destination wherever this segment exists or is under consideration like an option for its economic growth. Ports too often perceive that they need the cruise ships more than the cruise lines need them, but in fact there is a mutual need. Ports have not yet realised that with the recent expansion of the cruise industry cruise lines need new ports as much if not more than the ports need them. Ports continue building new piers and terminals to both attract cruise ships and to keep them coming back (Klein, 2003).

This paper intends to be a reflection that invites decision makers of cruise destinations to think about what they expect with the promotion of cruise tourism and to take decisions based on serious studies. It is also very important that destinations have a serious policy of promotion and management of cruise activity in their territory. This paper is nothing more than a preliminary study about cruise ship industry. We intend to use this study as an initial material for future researches. There is much to do, trying to hear players points of view who have not been heard, collect data and thereby (there is very few data about cruises and in particular about impacts of their activity), provide results that can be used to inform local governments on the effects of cruise tourism and so on.

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