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LEISURE PORTS PLANNING

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Abstract

Leisure ports constitute a separately identifiable leisure option which is normally associated with Maritime Tourism. They form a highly dynamic sector whose expansion has knock-on effects, both direct and indirect, on numerous economic activities. The lack of foresight in the development of leisure ports and indiscriminate local actions aimed at solving the problem of the increase in maritime recreational activity may lead to an irreversible deterioration in the coastal environment in which this activity takes place. An awareness of the gravity of this threat led the Regional Government of the Autonomous Community of Cantabria (Spain) to reflect on several important points: Which are the key factors to take into account when establishing a non-speculative ports policy which respects the coastal environment? How could the degradation of the coastal strip be avoided while, at the same time, the real needs of the region are satisfied? The aim of the present paper is to evaluate the magnitude and economics importance of the recreational fleet, considering these as decisive aspects in the planning decisions finally adopted.

Key words: Planning leisure seaports; Impact of the recreational fleet; Regional Input-Output analysis.

BACKGROUND

In Spain, the construction and exploitation of leisure ports is undertaken through private initiative upon the concession of the corresponding government authority. Thus, the general port development of a region is a consequence of a set of

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individual concessions. It would seem clear, therefore, that the key to a possible planned development of leisure ports lies in the control of the concession granting process. But who grants these concessions?

The current configuration of the Spanish State of Autonomous Communities, consecrated in the Constitution of 1978, establishes the exclusive competence of the State in commercial ports of general public interest and the competence of the Autonomous Communities in leisure[2]. Although this arrangement might seem at first sight simple, the practical consequences of this separation in the Constitution are not so explicit. The concessions for the construction of leisure ports in coastal areas under the ownership of the commercial ports of general interest are granted by the Port Authorities. Both the ports and the port authorities form part of the Spanish State ownership ports programme[3]. However, since 1997 these ports have been at the service of regional economic development and their governing bodies are designated by the Autonomous Communities[4].

Leisure ports built in other ports of non-general interest or in any other area of the region require the concession of the corresponding Autonomous Community. These ports make up the regional ports system to be analysed[5] (See Figure 1).

In keeping with the above, it can be stated that there is a form of direct or indirect control by the Autonomous Community over the granting of concessions for building leisure ports in the region. Thus, the governments of the Spanish autonomous communities have sufficient mechanisms at their disposal to be able to develop a regional ports programme. But what really happens in practice? There are, in fact, two clearly identifiable situations.

The first is a completely unplanned regional ports development, in which ports are built in response to the initiatives of constructors and developers. After designing a basic project, these constructors or developers initiate a series of proce-

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[2] The Spanish Constitution, in its article 148, establishes that the Autonomous Communities can assume the competence in matters of ports of shelter, leisure ports and any ports which do not undertake any commercial activity. The Statute of Autonomy of Cantabria, meanwhile, stipulates, in its article 22.6, that the exclusive competence in matters of ports of shelter, leisure ports and any ports which do not undertake any commercial activity corresponds to the Regional Government of Cantabria.

[3] The Spanish ports system is made up of 45 greatly varied ports of general interest (commercial ports under State ownership) run by 27 Port Authorities which are co-ordinated by the National Ports Office.

[4] Due to the economic and social impact that the ports of general interest have for the Autonomous Communities and given the new territorial organisation of the Spanish State, it would seem appropriate that these should have a greater say in the decisions taken by the Port Authorities, in order to integrate more effectively the economic and territorial interests of the Autonomous Communities affected. To this end, the Ports Law of 1997 established that the Autonomous Communities should designate the president of this organism and determine the final composition of its governing board.

[5] Since 1982 the Regional Government of Cantabria has control over the Santander Ports Group composed of the ports of Castro Urdiales with the port installations of Saltacaballos, Ontón and Mioño, Laredo, Colindres, Santoña with its insatallations at Quejo, Suances with its installations in the estuary, Comillas and San Vicente de la Barquera with its installations at Unquera.

dures which may last for several years, in which the main obstacle is that of the "declaration of environmental impact" issued by the Ministry of The Environment, after countless enquiries to different organisms and organisations. Finally, if the responses are all positive, the concession is granted for a maximum period of 30 years in exchange for the payment of two canons (for occupation and exploitation).

The second situation is one of a planned regional ports development which responds to public initiative. In these cases, all of the procedures involved are usually undertaken by the regional Department which has established the plan. Once all of the problems are solved, this department will grant the concessions to promoters in view of criteria of publicity and transparency. The system is really a mixed one combining both private and public initiative.

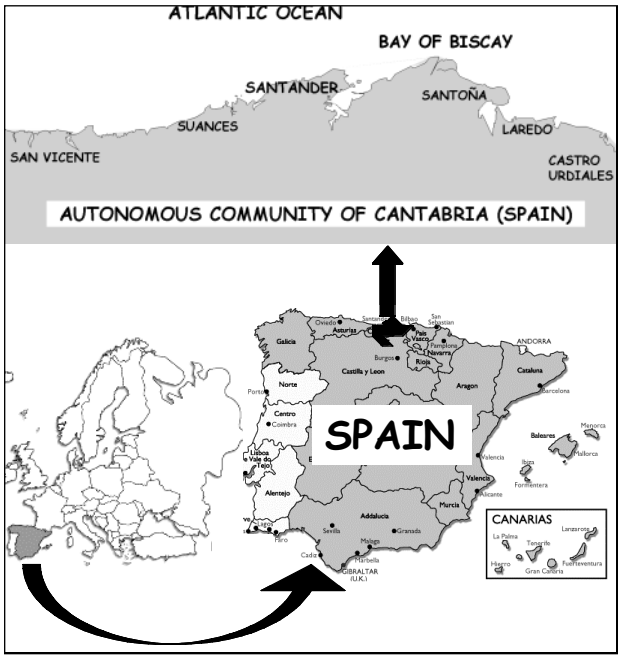

Figure 1: Map of locations of main seaports of the Autonomous Community of Cantabria

In 1999, with all of this in mind, the Ports Council of The Autonomous Government of Cantabria (Spain) decided that the time had come to provide a solution to the serious problems facing the region's recreational fleet. The demand for the building of leisure ports was increasing. There were a number of different private and/or municipal projects on the negotiating table, leading the politicians to reflect on whether it was advisable to look ahead and plan the future of the region's maritime leisure installations and whether the lack of such a plan might not lead to an irreversible deterioration in the coastal environment. They came to the conclusion that a regional ports policy was required. The main consideration in the design of these recreational port installations had to be the type of craft using them. The idea was not to pepper the coast with countless leisure ports in the style of "residential ports". The aim was rather to accommodate a recreational fleet which suffered from rather poor mooring facilities and a lack of suitable installations - a situation which might, unless modified, cause a certain degree of damage to the coastal area. Thus,

the Autonomous Government of Cantabria began to set up several studies to enable them to estimate the real regional demand for leisure ports in relation to the present and future magnitude of the recreational fleet.

They also felt that the time was right to determine the economic importance of the sector for the region. There already existed certain widely accepted reasons for studying the "qualitative importance" of the maritime recreational sector. This sector is, of course, one which is deeply rooted in the seafaring tradition of the region. Moreover, the area of the coast from which maritime activities can be practised is indeed extensive. These factors contributed to the sustained expansion of the fleet. However, certain other factors of a more "quantitative" nature were also required in order to determine the economic importance of the recreational fleet in Cantabria.

Finally, it was felt that both the physical and economic importance of the fleet should be decisive factors in the definition of the leisure ports planning and development policy. Thus, the Regional Authorities, as well as accessing information on the real need for berths, could also assess the impact that the activity of the recreational maritime fleet might have on the rest of the regional economy.

In keeping with the above, the present work is developed under the hypothesis that the arguments outlined above will be the ones used by the relevant political bodies in Cantabria to enact a regional leisure ports plan. Our aims are thus twofold: first, to determine the size of the recreational fleet; and second, to evaluate the macroeconomic impact that this activity has on the regional Gross Operating Surplus (GOS) and Employees' Salaries (ES).

METHODOLOGY

This section outlines the instruments which form the basis of the methodology used to determine the present and future magnitude of the fleet and its impact on the rest of the economic sectors of the regional economy of Cantabria. On the one hand, an in-depth knowledge of the fleet is essential in order to be able to develop a regional ports plan responding to real needs. Secondly, an in-depth knowledge of the socio-economic effects of the sector on the region will serve as an argument for, or against, the political decision to develop such a plan.

We shall thus outline below the set of techniques and methods used in the elaboration of the census of the recreational fleet of Cantabria, in the prediction of the future of the fleet and in the determination of the effects of the sector on the regional economy.

The Census of Recreational Craft

One of the main aims of the present work was to verify the exact magnitude of the recreational fleet of the Autonomous Community of Cantabria. The lack of any data on this sector led us to devise a census of the region's craft. (CERCAN-98). The following stages of the work were established: 1) Definition of the computing

tool, design and elaboration of a data base which would permit the future storage and treatment of the data. 2) Enquiries and Data gathering from the registers; and 3) Data Processing.

The census was to gather data pertaining to the fleet units in active use inscribed in any of the six registers existing in the region's ports: Castro Urdiales, Laredo, Santoña, Santander, Requejada (Suances), and San Vicente de la Barquera. Among the variables used to define the characteristics of the craft, the most important, apart from those incorporated for the purposes of control, are the length, age, type of craft, material of hull, country of construction and residence of owner. This meant the gathering and processing of more than 100,000 fields in a data-base.

Fleet Prediction Process

In order to carry out the predictions of the number and GRT of the fleet, ARIMA time series models were constructed. These models have been estimated both for the six above-mentioned regional registers and for the whole of Cantabria.

The annual historic series of the fleet had to be elaborated from data obtained directly from the various registers of Cantabria, as there are no figures published on this area. The first craft registered in Castro Urdiales dates from 1907, in Santander 1914, in Santoña 1924, in Laredo 1943, in Requejeda 1952 and in San Vicente de la Barquera 1969. Thus, in order to contemplate the same time scale for all the series considered, annual data were used from 1960 to 1998 (39 observations per series). Predictions have been made from 1999 to the year 2005.

ARIMA processes are used for the explanation and prediction of time series through the use of the history of the series itself as the single source of information. Predictions are based on the central hypothesis that future conditions will be similar to those of the past. These models are particularly useful for short and medium term prediction.

The elaboration of an ARIMA model is carried out using the so-called Box and Jenkins method (1976), by means of the following stages: identification of the model, estimation of parameters, diagnosis of results and, finally, the predictions. In this sense we should point out the works of Hillmer and Tiao (1982), Madden and Batey (1983), Kohn and Ansley (1986), Findley et al (1998), and Fisher and Planas (1998). For the present paper, slight adjustments have been made to the general ARIMA model (0,2,2). Three measurements have been used to analyse the quality of these adjustments:

In order to study the quality of the adjustments, we have used:

— Mean square root error (MSRE) of each adjusted model.

— The relative percentage error (RPE-1998) for the prediction for the year 1998, that is, the comparison of the last real data available with its corresponding prediction.

Maritime Recreational Sector Multipliers

The determination of the effects of maritime activity on the region's economy constitutes the third objective of the present work. For this purpose it is usual to employ multipliers determined according to criteria of different types. In this sense, some of the most noteworthy works are those of Miyazawa (1968), Blackwell (1978), Batey et al (1987), Duchene (1993), Pulido and Fontela (1993), Otero (1995), Pulido (1996) and Isla (1998). In this study, these values have been obtained using a well-known application of input-output methodology - the demand model. Through this, the impact of the consumption of the maritime recreational sector on the different economic sectors of the region can be calculated. To implement this methodology, the input-output table (IOT) available for Cantabria for 1994 (IOT-CAN-94) has been used and the vector of consumption and investment has been drawn up for the maritime sector. These elements are essential for determining the multipliers which will eventually enable the impact of the maritime sector on the rest of the economy to be quantified. Thus, before turning to the multipliers themselves, let us now focus on the fleet consumption vector. This is the instrument which, together with the IOT, will enable the impact of demand to be determined. This vector is elaborated in three different stages:

1. Elaboration of a questionnaire on the consumption of the maritime recreational sector of Cantabria, through which the average expenditure of craft per items of consumption could be defined (Pérez-Labajos, 2001).
2. Estimation of the consumption and investment of the maritime recreational sector per items of consumption. The projection of this consumption of the craft obtained from the questionnaire onto the real universe allowed us to establish a total expenditure structure per items of consumption for 1998 and, through estimations, the predicted expenditure for 1999. Since the IOT used refers to 1994, we have deflated some consumption vectors to this year. As for the figures on investment in port infrastructures undertaken by the Public Works Department, the figures are for 1998 to 1999, according to the data provided by the Council of Hydraulic Works and Ports (Sarabia et al , 1999).
3. The net consumption vector for the maritime recreational sector per economic sector was estimated. The determination of the total consumption of the maritime recreational sector has been made by imputing the expenditure per items of consumption to the sectors of IOTCAN-94 in keeping with the records of the National Accountancy Office (see Figure 2).

The internal coefficients of the demand of the maritime recreational sector were determined. To do this, the net initial loss consumption of the maritime recreational sector, for each economic sector, was divided by the total consumption of the maritime recreational sector. These coefficients define the vector which determines the direct effects on production.

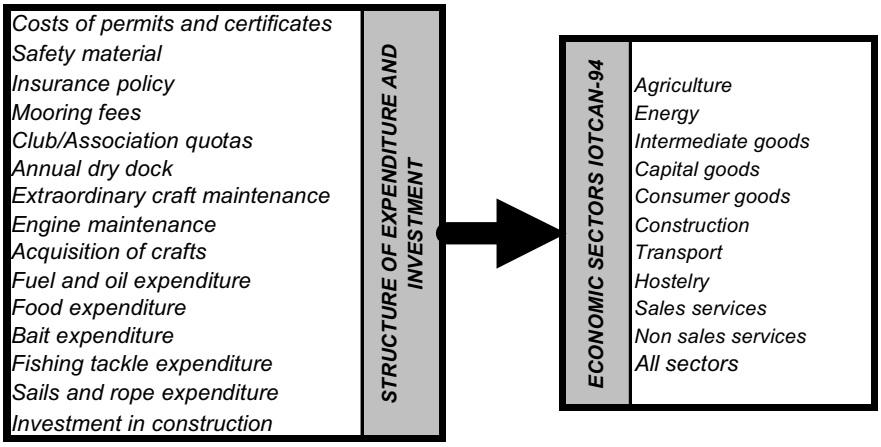

Figure 2: Imputation of Expenditure of Recreational Maritime Fleet of Cantabria per item of consumption to the net sector vector.

As for the multipliers, both internal and total multipliers were estimated. The so-called "internal multipliers", apart from any technological considerations, are those which enable the effective repercussions which an increase in demand from the maritime recreational sector would have on the internal production pattern. Thus, the intermediate consumption imports made by Cantabrian companies function as losses in the multiplier effect.

Multipliers and effects have been determined in absolute values for the GOS and the ES.

To do this, we defined previously the direct effects on internal consumption using the maritime recreational sector consumption vector itself [RSC^*]. Net maritime recreational sector consumption is synonymous with direct internal production.

The direct effects on the GOS have been determined by multiplying its coefficients matrix by the net maritime recreational sector consumption vector [GOS^*] [RSC^*].

The total effects of the maritime recreational sector on the gross operating surplus were determined by multiplying the direct effects by the Leontief inverse [GOS^*][$I-A]^{-1}$[RSC^*]. As for the indirect effects, these were determined from the difference between the total and the direct effects.

The direct effects on the RA were determined by multiplying its coefficients matrix by the net maritime recreational sector consumption vector [RA^*][RSC^*].

The total effects of the maritime recreational sector on employees' salaries was determined by multiplying the direct effects by the Leontief inverse [RA^*][$I-A]^{-1}$ [RSC^*]. As for the indirect effects, these were determined from the difference between the total and the direct effects.

As for the determination of the global multipliers and effects, the structure of impacts on the different magnitudes is similar to that shown by the internal production. The only aspect that changes is the Leontief inverse $[I-A]^{-1}$ which determines the total effects and, as indicated previously, this magnitude is determined from the total intermediate consumption. Thus, the direct effects do not change with respect to those determined internally.

ANALYSIS OF THE SIZE OF THE FLEET

In order to design realistic port developments, it is essential to verify the current and predicted magnitude of the recreational fleet in the Autonomous Community of Cantabria. The balance between the supply of maritime leisure installations and the real demand will allow for a better distribution of resources. Thus, at the end of 1998, the number of berths in the region was 1683.

The present section outlines both the structural analysis of the current situation of the fleet and the results obtained for the prediction of the fleet for the period 1999-2005.

Current situation of fleet

The elaboration of a Census of recreational craft allowed us to set about an in-depth analysis of the fleet, as summarised below.

On December 31st 1998, the Autonomous Community of Cantabria boasted an active registered recreational fleet of 5,301 craft with a total tonnage of 13,588.59 GRT. Taking into account that we are dealing with those craft listed in the harbour master's offices of Cantabria, these must have a length of ≥2.5 metres, as craft of smaller dimensions are not registered here. However, the larger craft, with a length of over ≥4.5 metres, account for 3,549 units with a total capacity of 12,255.2 GRT. Thus, although the structural analysis is focused on this latter section of the fleet, the analysis also takes in certain aspects of craft of less than 4.5 metres in length, since these constitute 1,752 craft with 1,333.35 GRT. The "de facto" fleet reached a total of 5,970 crafts, after adding to those registered in Cantabria around 669 units registerd outside but which remain in the region on a regular basis, mostly belonging to owners resident in Cantabria.

The variables formalised in the aggregate structural analysis presented here are the length, age, type of craft, material of the hull, country of construction and residence of owner. In all cases, we refer both to the number of craft and to the tonnage (GRT).

The *average capacity* of the craft of a length of ≥4.5 metres for all the Autonomous Community is around 3.45 GRT. Only Santander registers a value above this figure with an average capacity per craft of 3.84 GRT. The remaining ports give values below this average, in the following order: Laredo (3.32 GRT),

Castro Urdiales (2.56 GRT), Requejeda (2.52 GRT), San Vicente de la Barquera (2.44 GRT) and Santoña (2.09 GRT).

97.33% of all of the registered craft, which means a total of 87.43% of the total GRT, are shorter than 10 metres in length. The two most significant length groups are the ≥5 metres and the <10 metres segments, which together make up 64.78% of the tonnage. The average craft in the Autonomous Community has a length of between 5 and 7 metres.

As regards the *age of the fleet*, 51.25% of the craft and 39.42% of the GRT are less than 10 years old. Moreover, craft of over 20 years of age make up only 31.88% in number and 37.71% in GRT. In general terms, the craft of a smaller length are newer than the larger ones.

Of the 9 existing *types of craft*, only three are relevant, making up, in the section of the fleet with a length of ≥4.5 metres, 82.62% in number and 84.68% in GRT. These are on-board motor craft (53.17% of the fleet and 55.48% of the GRT), outboard motor craft (15.84% in number and 8.93% in GRT) and sailing boats (13.61% in number and 19.29% in GRT).

The *hulls* of the recreational craft of Cantabria are composed of thirteen materials. Most use polyester (47.7% in number and 55.4% in GRT), the next most used material being wood (39.17% in number and 28% in GRT) with plastic in third place (9.24% in number and 11.07% in GRT).

Most of the Cantabrian recreational fleet is of Spanish construction (85.66% of the units, making up 75.6% of the tonnage). Apart from Spain, the leading countries are France (5.8% in number and 10.09% in GRT) and The USA (3.07% in number and 4.96% in GRT).

Although there is a great diversity in the *residences of the owners*, Cantabria is the community in which most of them reside (72.25% in number and 64.52% in GRT), followed in order of importance by The Basque Country, Madrid, Castille-Leon (the latter make up 22.27% in number and 28.2% in GRT).

Another interesting aspect was the location of the craft in the different ports of region. In this analysis, we differentiate between the fleet registered in Cantabria from units under foreign registration. No doubt, this provides some information as to the qualitative aspect of demand.

In early March, 1999, once the task of identifying all of the craft of the Cantabrian fleet (registered units) in the various harbours of the Autonomous Community had been completed, 2,725 units had been located with a total tonnage of 7,691.42 GRT. These figures include craft of a length of ≥2.5 metres and <4.5 metres. Taking into account only those craft of a length of ≥4.5 metres, 1992 craft were identified, totalling 7,120.32 GRT. The differences between the values of the two segments of the fleet and the total figures registered, as indicated above, is accounted for by the craft which are "hibernating" in boathouses or other similar establishments in Cantabria or in other ports and/or places outside the Autonomous Community.

The *outside-registered craft* belong to three different types of owners. Firstly, owners resident in Cantabria, who have acquired their craft in another autonomous community. Bear in mind that even if there is a change in owner, the register is maintained. In order to keep a check on these craft which stay for long periods in a community outside that in which it is registered, the harbour master's offices issue a new sailing licence. Secondly, there are some owners who reside in other Autonomous Communities but use the various mooring and anchoring installations existent in Cantabria as stable base ports. Finally, there are a number of owners from neighbouring communities (The Basque Country and Asturias) who use these installations for short periods.

Future Situation (1999-2005)

The results obtained from the models of prediction of the future of the fleet are shown in Table 1. They refer to the number of crafts and the GRT predicted for the various leisure ports and for the whole of Cantabria, for the years 1999-2005.

Year	Prediction	Seaportts of Cantabria						Total
		Castro	Laredo	Santoña	Santander	Suances	S. Vicente	
1999	Number of craft	356	701	443	3.343	362	294	5.499
2000		365	716	463	3.475	378	302	5.699
2001		373	731	482	3.607	394	310	5.897
2002		382	746	502	3.739	410	318	6.097
2003		390	761	521	3.871	426	326	6.295
2004		399	776	540	4.003	442	334	6.494
2005		407	791	560	4.135	458	342	6.693
1999	GRT	737	1.766	644	9.929	586	431	14.092
2000		758	1.793	665	10.347	586	445	14.594
2001		780	1.820	686	10.764	586	459	15.096
2002		801	1.847	708	11.182	587	472	15.597
2003		823	1.874	729	11.600	587	486	16.099
2004		845	1.901	750	12.017	588	500	16.601
2005		866	1.928	772	12.435	588	514	17.103

Table 1: Annual predictions of the number of recreational crafts and GRT of the Cantabrian Fleet.

The expected growth rates, for most of the period considered, are over 3%. These rates are very similar both in their value and in their tendency, which is slightly on the decrease. If these predictions are fulfilled, then by the end of the period indicated above, 1,193 new units will have been incorporated with a total tonnage of around 3,010 GRT.

As regards the errors in the adjusted models, if we look at the number of crafts for the whole of Cantabria, it can be appreciated that the RECM is 78 units, which means an average error per year of 78 crafts according to the general model. This error is smaller if we consider each port individually: Castro Urdiales 6 crafts, Laredo 15, Santoña 12, Santander 50, Suances 8 and San Vicente de la Barquera 9. Logically, the greatest errors are for the larger ports. The relative percentage error (RPE) for the year 1998 is practically non-existent.

Table 2 contains the errors for the series: number of crafts and number of GRT per port. The RECM for the whole of Cantabria is 154 TRB. The relative percentage errors for 1998 are also insignificant.

Seaports	Number of craft		Number of GRT	
	MSER	RPE(1998)	MSER	RPE(1998)
Castro Urdiales	6,37	-0,57	15,70	-1,05
Laredo	15,04	0,00	40,91	-0,31
Santoña	12,32	0,71	14,80	-0,05
Santander	45,92	0,00	113,69	1,47
Suances	8,44	0,58	11,88	-0,51
San Vicente	8,66	-0,35	11,57	1,71
Total	77,91	0,26	153,69	-1,24

Table 2: Measurement of error of adjusted models.

MSER
= mean square error root

RPE (1998)
= relative percentage error for the year 1998

MACROECONOMIC IMPACTS OF THE MARITIME RECREATIONAL SECTOR

This section presents the results obtained for the impacts, both on the internal production of Cantabria (only that realised by resident companies) and the global production (as well as the internal production, imports are also taken into account). The multipliers have been calculated for the year 1998 and estimated for the year 1999 for the gross operating surplus (GOS) and for employees' salaries (ES).

Internal Production of Cantabria

This item refers to the multipliers determined taking into account the inputs supplied by resident companies. Thus, the multipliers measure the internal economic impact produced by the demand of the maritime recreational sector of Cantabria on the rest of the economic sectors of the region (see Table 3).

The total internal multiplying effect of demand of the maritime recreational sector on the GOS for 1998 is 23.83%. This means that for every $100 of expenditure of the maritime recreational sector, a GOS of $23.83 is generated. The impact of the direct multipliers is 16.95%, while that of the indirect multipliers is 6.89%. In 1999, the total effect is 24.2% (17.24% being direct and 6.9% indirect).

The demand of the maritime recreational sector produced, in 1998, a total internal multiplying effect on ES of 29.04%. This means that for every $100 ptas. of consumption of the sector, $29.04 of ES are generated. The consumption of the maritime recreational sector generated $21.68 directly and $7.35 indirectly. The total multiplier for 1999 is 30.21%, 22.68% corresponding to direct effects and 7.58% to indirect effects.

Table 3. Internal Multipliers of GOS and ES of recreational maritime sector, per sector (1998-1999).

Economics Magnitudes	Year	Effects	Agriculture	Energy	Intermediate goods	Capital goods	Consumer goods	Construction	Transport	Hostelry	Sales services	Non sales services	All sectors
GOS	1998	T	0,0248	0,0084	0,0093	0,0320	0,0087	0,0470	0,0069	0,0157	0,0826	0,0030	0,2383
		D	0,0207	0,0042	0,0000	0,0292	0,0077	0,0460	0,0000	0,0000	0,0614	0,0004	0,1695
		I	0,0041	0,0042	0,0093	0,0029	0,0010	0,0010	0,0069	0,0157	0,0212	0,0026	0,0689
	1999	T	0,0232	0,0080	0,0099	0,0296	0,0083	0,0577	0,0073	0,0151	0,0799	0,0031	0,2420
		D	0,0193	0,0038	0,0000	0,0267	0,0073	0,0567	0,0000	0,0000	0,0582	0,0004	0,1724
		I	0,0039	0,0042	0,0099	0,0029	0,0010	0,0010	0,0073	0,0151	0,0216	0,0027	0,0696
ES	1998	T	0,0036	0,0055	0,0141	0,0971	0,0150	0,0844	0,0045	0,0062	0,0308	0,0292	0,2904
		D	0,0030	0,0027	0,0000	0,0884	0,0132	0,0826	0,0000	0,0000	0,0229	0,0040	0,2168
		I	0,0006	0,0027	0,0141	0,0087	0,0018	0,0018	0,0045	0,0062	0,0079	0,0252	0,0735
	1999	T	0,0034	0,0052	0,0150	0,0899	0,0143	0,1036	0,0048	0,0059	0,0298	0,0303	0,3021
		D	0,0028	0,0025	0,0000	0,0810	0,0126	0,1018	0,0000	0,0000	0,0217	0,0039	0,2263
		I	0,0006	0,0027	0,0150	0,0089	0,0017	0,0018	0,0048	0,0059	0,0081	0,0264	0,0758

T = Total; D = Direct; I = Indirecs

Total Production of Cantabria

This section presents the results obtained from the global multipliers which, unlike the internal ones, take into account the total requirements of intermediate consumption (both that supplied by resident companies and by imports). The structure of the impacts on the various macromagnitudes is similar to that shown for the internal production. Moreover, given that the direct effects are the same as those determined previously by the internal multipliers, we shall refer only to the total and indirect effects (see Table 4).

The total multiplying effect of demand of the maritime recreational sector on the GOS is 35.5%. This means that for every $100 of expenditure of the maritime recreational sector, $35.5 of GOS would be generated. The indirect multiplying effects would be 18.6%. For the year 1999, the total effects reach 35.97% and the indirect effects 18.73%.

The demand of the maritime recreational sector originated in 1998 a total multiplying effect on the ES of 39.74%. Every $100 of consumption of the maritime recreational sector would generate $37.74 in ES. The impact of the indirect multiplying effect would be 18.05%. The effects for the year 1999 would be 41.03% for the total and 18.4% for the indirect multipliers.

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Table 4. Totals Multipliers of GOS and ES for recreational maritime sector, per sector (1998-1999).

Economics Magnitudes	Year	Effects	Agriculture	Energy	Intermediate goods	Capital goods	Consumer goods	Construction	Transport	Hostelry	Sales services	Non sales services	All sectors
GOS	1998	T	0,0266	0,0384	0,0255	0,0383	0,0108	0,0475	0,0128	0,0348	0,1157	0,0046	0,3550
		D	0,0207	0,0042	0,0000	0,0292	0,0077	0,0460	0,0000	0,0000	0,0614	0,0004	0,1695
		I	0,0060	0,0343	0,0255	0,0092	0,0031	0,0015	0,0128	0,0348	0,0543	0,0042	0,1856
	1999	T	0,0250	0,0386	0,0268	0,0359	0,0104	0,0582	0,0133	0,0338	0,1132	0,0047	0,3598
		D	0,0193	0,0038	0,0000	0,0267	0,0073	0,0567	0,0000	0,0000	0,0582	0,0004	0,1724
		I	0,0057	0,0348	0,0268	0,0092	0,0031	0,0015	0,0133	0,0338	0,0550	0,0043	0,1873
ES	1998	T	0,0038	0,0250	0,0386	0,1163	0,0186	0,0853	0,0084	0,0137	0,0431	0,0445	0,3974
		D	0,0030	0,0027	0,0000	0,0884	0,0132	0,0826	0,0000	0,0000	0,0229	0,0040	0,2168
		I	0,0009	0,0223	0,0386	0,0279	0,0054	0,0027	0,0084	0,0137	0,0202	0,0405	0,1805
	1999	T	0,0036	0,0251	0,0407	0,1089	0,0179	0,1045	0,0086	0,0133	0,0422	0,0455	0,4103
		D	0,0028	0,0025	0,0000	0,0810	0,0126	0,1018	0,0000	0,0000	0,0217	0,0039	0,2263
		I	0,0008	0,0226	0,0407	0,0279	0,0053	0,0027	0,0086	0,0133	0,0205	0,0416	0,1841

T = Total; D = Direct; I = Indirecs

CONCLUSIONS AND REGIONAL LEISURE PORTS POLICY

Towards the end of 1998 the excess of demand was around 71,8% %, which meant that more than 4000 berths were needed. Moreover, for the period 1999-2005 (both inclusive) a mean annual growth of the fleet of around 200 units and 500 GRT was predicted. This meant an annual growth of over 3% for both items. All of this could lead to a deterioration in the future situation which might take the shape of an uncontrolled increase in the occupation of the harbours.

The economic impact of the maritime recreational sector on the regional economy of the Autonomous Community is increasing, as can be deduced from the evolution of the multipliers estimated for the years 1998 and 1999 for the macro-magnitudes analysed. The "leaks" in the multiplier effect produced by the importing of intermediate consumption by the sector, determined by the differences between the total and the internal multipliers, show a considerable reduction in the GOS (0,33%) and to a greater extent in the EA (1,04%). These reductions bring to light the increasing substitution of imports in the sector due to the greater participation in the activity of resident companies. Both of these increases contribute positively to the regional GAV factor costs (with its various components)

Taking into account the present and future needs of the recreational fleet and its economic importance, the Regional Government of Cantabria resolved to carry out a Regional Programme of Leisure Port Installations, both public and private, a programme which was above any kind of speculative pressure and which respected the coastal environment. Preparatory technical studies were initiated in order to sat-

isfy the great excess of demand for the existing berths. Thus, the construction of several installations was planned for the next few years with a total of 3,293 berths distributed as shown in the Table 5.

Predicted situation of installations	Nº of berths (years 1999-2005)
San Vicente	1.500
Suances	75
Santander (Bahía)	800
Santander to Santoña (Isla y Somo)	218
Santoña	150
Castro Urdiales	550
Total	3.293

Table 5: Developing regional leisure seaports.

LESSONS LEARNED

It would appear to be ever more evident that, in the case of public initiative projects, apart from their economic feasibility, the socioeconomic impacts induced by them should be evaluated. These projects should be presented and accepted not only on a political level but on a social level, too. Thus, any other qualitative or quantitative evaluation, whether or not these are used for the final planning, must be accompanied by an estimation of the socio-economic effects of the project.

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