



Sustainable Tourism Development in Croatian Coastal Area

Pilot project Baška Voda



Split, September 2008

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Note

This document is a part of the UNEP handbook "Handbook on Sustainable Tourism in Coastal Zones: The ICZM Approach" which, in turn, is a part of UNEP "Practical Manuals on Sustainable Tourism" publication series. Željka Škaričić was responsible for the co-ordination and Marina Marković was responsible for the concept of the publication. Alessio Satta, Željka Škaričić and Ivica Trumbić were responsible for the technical editing, Neven Stipica was responsible for proof reading of the English and Croatian texts, and Marina Marković is the author of the document.

Photographs: Courtesy Tourist Board of Baška Voda

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I. General Information

1.1 Background

In the framework of Integrated Coastal Zone Management (ICZM), tourism is identified as one of the most important activities in the coastal areas. A number of documents published by international organisations such as United Nations Environment Programme (UNEP), European Commission (EC), European Environment Agency (EEA), and Organisation for Economic Co-operation and Development (OECD) are pointing out the need to encourage the implementation of pilot actions for ICZM at local, national and regional scale. The ICZM approach provides a comprehensive set of actions associated with its development cycle and today is applied worldwide. However, establishing its coherent and comprehensive implementation at the tourism sector remains a challenge.

In this context, the Division of Technology, Industry and Economics of the UNEP (UNEP-DTIE) contracted PAP/RAC to prepare a practical methodological handbook for sustainable development of tourism in coastal areas under the ICZM approach. The Handbook is a stand-alone document that enables planners, decision makers and managers to understand how they can develop sustainable coastal tourism on the basis of the ICZM framework. The main context of the handbook is structured around a simple managerial framework for tourism development (for example: plan-do-review-improve) and its adaptation according to the ICZM and sustainable tourism principles.

A test application of this handbook was performed at a very small scale in Baška Voda, one of the most important tourist destinations of Dalmatia (southern Croatian coastal area). The pilot project was implemented between July and December 2007 (hereafter referred to as Pilot UNEP/PAP project). The primary focus was on analysing the strengths and weaknesses of the bathing areas of Baška Voda, and proposing its sustainable management within the general tourism development context.



1.2 Physical Overview

Baška Voda is situated at the foot of the Biokovo mountain, 50 kilometres south-east of the town of Split. Once a farming and fishing town, this idyllic spot is now one of tourist destinations of the Makarska riviera in the central part of Dalmatia (MakarskaInfo, accessed in 2007). Baška Voda is one of the seven main settlements of the municipality of Baška Voda, which also includes Baško Polje, Topići, Bast, Krvavica, Bratuš and Promajna.

The coastal area of the Makarska riviera is composed of three main geomorphologic units:

- steep slopes of the Biokovo mountain;
- narrow coastal zone; and
- steep and fertile ground in-between.

The steep cliffs of the Biokovo mountain are made of Jurassic sediments, as well as limestone and dolomite rocks and rock creeps. Due to these rock creeps and intensive flooding, the coastal zone of the Makarska riviera is rich in natural pebble beaches, that are quite a rare natural habitat in Croatia (PPBV, 2007). The coastal area of the Municipality is 6 kilometres long, composed of cliffs, rocky shores and beaches. Only minor parts of the coastline of Baška Voda, Promajna and Krvavica settlements are artificial.

The climate of the Makarska riviera is of a mild Mediterranean type, with warm and dry summers and mild, rainy winters. The average insolation is 2,700 hours per year, with an average temperature of 20°C. The sea temperature in the summer months is between 25 and 27°C (IR, accessed in 2007).

The area is very windy. In wintertime, there is a very strong northern wind (bora) which can sometimes reach the speed of 50 meters per second. In spring and fall, the most common is a south-eastern wind, which brings rainy but mild weather. During summer dominant is a western wind. Although the aquatory is relatively protected by a chain of islands, north-western and south-eastern winds have a strong influences on waving processes (PPBV, 2007).

Crystal clear and warm sea, relatively preserved natural environment and favourable geographical position on the Adriatic coast at the heart of Dalmatia make Baška Voda an ideal living and leisure destination. Confirmation of that could be found in traces of life dated more than three thousand years ago.

1.3 Socio-economic Overview

In 1991, the municipality of Baška Voda had 2,173 inhabitants. According to the Census of 2001, it had 2,924 inhabitants, out of which 2,045 were registered in the town of Baška Voda itself, and the rest in the settlements of Promajna, Bratuš, Krvavica and Bast. Such a population figure (2,924) already exceeds (by about 450 people) the number of inhabitants of Baška Voda envisaged for 2010 by the County Physical Plan. The population figures for the Municipality of Baška Voda, for the period 1981-2001 are presented in Table I.1.

In the Municipality of Baška Voda 51.6% of all inhabitants are female (Table I.2); moreover, in all the settlements of the Municipality females make population majority. Also, approximately 64.2% of all the population are within the working contingent (15-64 years), which is below Croatian average (66.3%). The sex analysis of the working contingent is presented in Table I.3. However, the population under 19 (26.3%) exceeds that of above 65 (15.9%). Having in mind the negative demographic trend in Croatia (especially in some coastal and island areas) this is highly encouraging for potential future development.

Table I.1: Baška Voda population figures (1981-2001) (Source: PPBV, 2007)

Municipality of Baška Voda	Surface		Population		
	km ²	%	Census 1981	Census 1991	Census 2001
Municipality of Baška Voda – total	45.65	100.00	2,040	2,173	2,924
Baška Voda	4.54	36.47	1,490	1,609	2,045
Promajna-Bratuš-Krvavica	5.25	42.16	370	406	743
Bast	2.66	21.37	180	158	136

**Table I.2: Sex distribution in the Municipality of Baška Voda
(Source: DZS, Census 2001)**

Municipality of Baška Voda	Sex			Age			
	F	M	Total	0-19	20-64	+65	Unknown
Municipality of Baška Voda – total	1,416	1,508	2,924	768	1,680	466	10
Baška Voda	996	1,049	2,045	534	1,183	320	8
Promajna-Bratuš-Krvavica	358	385	743	208	430	103	2
Bast	62	74	136	26	67	43	-

**Table I.3: Sex analysis of the working contingent in the Municipality of Baška Voda
(Source: DZS, Census 2001)**

Municipality of B. Voda	Age									
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64
Male	92	100	102	106	88	90	88	99	67	87
Female	104	97	96	94	119	87	104	116	55	85
Total	196	197	198	200	207	177	192	215	122	172

Of all the activities in the Municipality of Baška Voda, tourism (hotels and restaurants) is the second most important activity (Table I.4). Namely, 14.2% of the workforce are employed in that sector. However, there are a number of people that rent tourism apartments as a side activity and/or as an unregistered activity; or work seasonally at cafés, hotels, restaurants, etc.; or within some other tourism-related activity (other than hotels and restaurants). Therefore, it can be expected that the number of people actually involved in tourism activities is much higher than the one presented in the table.

Table I.4: Analysis of employment in the Municipality of Baška Voda (Source: DZS, Census 2001)

Activity	Municipality of Baška Voda		
	M	F	Total
Agriculture, forestry and hunting	499	415	914
Fishery	15	1	16
Processing industry	51	8	59
Electricity, gas and water supply	16	2	18
Construction	28	2	30
Trade	49	61	110
Hotels and restaurants	124	135	259
Transports and warehousing	34	18	52
Financial mediation	1	6	7
Real estate	14	24	38
Public administration	39	23	62
Education	6	31	37
Healthcare and social services	10	20	30
Other social services	17	10	27
Households with employed personnel	-	3	0
Working abroad	81	60	141
Unknown	8	10	18

1.3.1 Environment

The coastal and marine area of Baška Voda is rich in biodiversity. According to the research performed by the Institute of Oceanography and Fishery (1993) in the wider area of Makarska riviera there are 209 macrozoobenthos species (*Porifera* 28, *Cnidaria* 10, *Mollusca* 100, *Annelida* 10, *Crustacea* 22, *Bryozoa* 6, *Echinodermata* 20, *Tunicata* 12) (PPBV, 2007).

There are some infrastructure limitations that pose a threat to the coastal environment of Baška Voda. One of the most significant ones is absence of a wastewater treatment plant. Namely, the settlement of Baška Voda has a sewerage system in place that has a relatively long submarine outfall, but no treatment has been provided so far. However, it should be pointed out that a great number of houses in the Municipality are not connected to the sewerage system. These houses

illegally release the wastewaters directly into the sea. This poses a considerable threat to the marine environment.

The municipal solid waste used to be transported to the landfill of "Donja gora" in Podgora, serving the entire Makarska area. However, that landfill was not suitable so all the waste is now first transported to Makarska and then on to other landfills in the Split-Dalmatia County, until a common County waste management centre is in place.

1.4 Tourism Overview

1.4.1 Tourism in Croatia

Over the past 10 years Croatia has put a great effort in re-developing and strengthening its tourist orientation, and has nurtured an image to suit the slogan of the destination: "*Croatia – the Mediterranean, as it once was*". Therefore, the whole marketing image of Croatia is based on presenting it as a destination with a clean environment, avoiding coastal over-development, preserving traditional Mediterranean lifestyle and traditional architecture blended with modern culture. As a result of its internationally recognised "natural attractiveness", the Lonely Planet (2005), a renowned tourist guide, proclaimed Croatia as the most desirable destination in the world for 2005 (HTZ, 2005a). Some other known international journals, i.e. National Geographic Adventure (2005), declared Croatia to be one of the best tourist destinations in 2006, mainly due to its' "*outstanding*" natural scenery (HTZ, 2005b).

For the period between 1995 and 2020, it is forecasted that Croatia can expect a maximum annual growth rate in foreign tourists' arrivals of 8.4%, compared to the global growth rate of 4.1% (UNWTO, 2001; 2006). Such a high rate is partly the result of low numbers in 1995. In addition, it is envisaged that the overnight stays growth for the period 2000-2010 will be 4.3%, which puts Croatia in the category of the fastest growth rate for tourism in the whole Mediterranean.

In 2003, the total accommodation capacities of Croatia accounted for 782,651 beds distributed in 1,341 tourism structures (rooms/apartments). Private accommodation makes 41.8% of all the capacities, camps 25%, hotels (and hotel-like accommodation type) 20.2%, nautical ports 7% and the rest 6%. Out of all hotel beds available (93,380) in 2003, 53% were in the 3-star category, only 9% were 4 and 5-star hotels, and 38% were 1 and 2-star hotels (HC, 2006). Such a great number of 1 and 2-star hotels indicates a generally inadequate level of tourism accommodation services. However, high-level services are particularly important for high-quality tourism development.

Tourist arrivals to Croatia in 2003 totalled 8.8 million, growing to 11.2 million in 2007 (out of which 9.3 were foreigners), which is 7.5% more than in 2006. These tourists accounted for 56 million overnight stays, which is 5.7% more than in 2006. Furthermore, the average utilisation of accommodation capacities was 59 days in 2007, which is an increase when compared to 2006 (57), while the average number of days spent in a destination was 5.0, which is a slight drop when compared to the previous years (5.1 in 2006) (MT, accessed in 2008). International tourism receipts have a special importance for the Croatian economy. Preliminary receipt data for the first nine months of 2007 show that tourism revenues in Croatia were 6.2 billion Euro, i.e. 22% of the total GDP for Croatia and 7.5% increase when compared to 2006 (MT, accessed in 2008).

In the past, most tourists came from Germany and Italy, but as of recently considerable numbers of tourists arrive from Slovenia, the Czech Republic, Austria, the Netherlands, France and UK. According to a tourism survey undertaken by the Institute of Tourism (2005), the characteristics of overseas tourists based on a 4,476 sample in 2004, were:

- Aged *circa* 40, higher education (60%); coming with family (43%); most visitors came more than 3 times (69%), 40% came > 6 times; 82% came by car;
- The main reason for coming was to relax; nature beauty was fourth on the list of reasons;
- 38% stayed 4-7 nights with an average expenditure of 49€ per day. This represents 42% more than in 2001 (IT, 2005).

Analysing the reasons for selecting Croatia as a holiday destination, it can be said that tourists arrive to Croatia mainly to relax and enjoy "sun and sea" (IT, 2002). A 2001 survey performed by the Institute for Tourism (2002) on a sample of 4,210 tourists (domestic and international)

relating to the "motivation for choosing Croatia" is presented in Table I.5 (IT, 2002). Out of these, 32.5% came to Croatia because of its natural beauty. At the same time, tourists pointed out beach cleanness together with natural and scenic beauties, as the most important aspect when selecting a holiday destination. The scenic beauty is the aspect that tourists in Croatia evaluated as the one they are most satisfied with (IT, 2002).

Table I.5: Tourist motives for choosing destination in 2001; N=4210 (Source: IT, 2002)

Rank	Motive	%
1.	Relaxing	91.1
2.	Fun	36.1
3.	Natural beauty	32.5
4.	New experiences	20.2
5.	Sport, recreation, fitness	10.0
6.	Closeness	9.8
7.	Cultural features	7.5
8.	Price	6.5
9.	Visiting relatives and friends	6.2

In 2004, similar results were found as in the 2001 (IT, 2002) survey. Still, the main motive remained "relaxing", though with a lower percentage (67%), and natural beauty, as a reason for choosing the destination, moved to the fourth place (24%; IT, 2005). Tourists pointed out that natural and scenic beauty of Croatia was the most satisfying factor together with beach cleanness (IT, 2005). Also noted were host kindness, environmental values and value for money. Negative aspects were the lack of sporting, recreation, cultural programmes/activities, visitor information, etc. (IT, 2005).

1.4.2 Tourism Figures for the Split-Dalmatia County

In 2005, the Split-Dalmatia County had 1.5 million tourists with 8 million overnight stays. Similarly, in 2006 it had 1.55 million tourists and 8.3 million overnight stays. Figures for 2007 show a 12% increase in the number of tourists (1.7 mil) and 11% increase in overnight stays (9.2 mil) (MT, accessed in 2008). In the County, almost 64% of accommodation capacities are in private accommodation, 18% in hotels, 9% in camping sites, and 4% in marinas (Table I.6). There are about 85 hotels, with 56% with three stars and 26% with only 2 stars (Jurišić, 2006).

Table I.6: Accommodation capacities of the Split-Dalmatia County (Source: Tourist Board of the Split-Dalmatia County)

Type of accommodation	Number of beds	Share in total capacity
Hotel accommodation	24,682	18.1 %
Private accommodation	87,316	63.9 %
Camping sites	12,753	9.3 %
Nautical ports and marinas	4,936	3.6 %
Other types of accommodation	7,011	5.1 %
Total capacity	136,698	100.0 %

With the above mentioned accommodation capacities, the Split-Dalmatia County participates with more than 17% in the total Croatian capacities. However, the County's overnight stays figures account for only 14.7% of the total Croatian overnight stays. This indicates that the **County's tourism capacities are under-utilised**, and this calls for rapid improvement (HC, 2006).

Based on official statistical data (TZSDZ, 2007), significant foreign tourists' arrivals in 2007 started in April. The greatest number of tourists (especially foreign) was recorded in July and August (64%), and about 88% of all tourists was recorded in the period between the beginning of June and the end of September. That reflects pronounced seasonality of tourism in Dalmatia. However, domestic tourist arrival shows a more balanced trend in the Split-Dalmatia County throughout the whole year. These data are shown in Figure I.1, prepared by the Croatian Bureau of Statistics. In addition, the trend of overnight stays growth in the pre-season and post-season

has been recorded. This could indicate that the tourism development in the County is heading towards extension of the three-month tourism season. However, a number of actions and improvements are needed to fully achieve such an improvement.

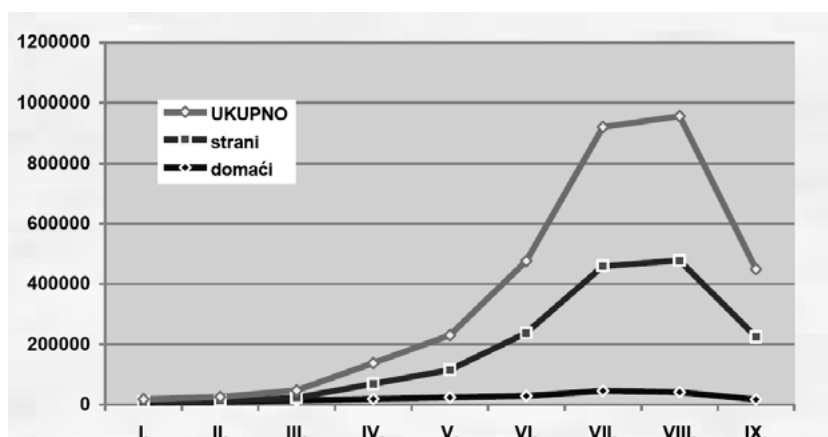


Figure I.1: Monthly tourist arrivals in the Split-Dalmatia County in 2007

(Source: Croatian Bureau of Statistics)

Key: "domaći" – domestic tourists, "strani" – foreign tourists, "Ukupno" – total

According to the statistical data of the Split-Dalmatia Tourism Board (TZSDZ, 2007) for the period January-September 2007, the number of foreign tourists' arrivals totalled more than 1.3 million with 8 million overnight stays, which is a 6-8% increase when compared to 2006. As a result of the successful tourism season 2007, the Split-Dalmatia County was the third most successful County of Croatia according to tourist figures. Furthermore, based on its tourism results in 2007, the Split-Dalmatia County is the most successful Dalmatian County. Comparison of tourist figures in some Croatian Counties is shown in Figure I.2.

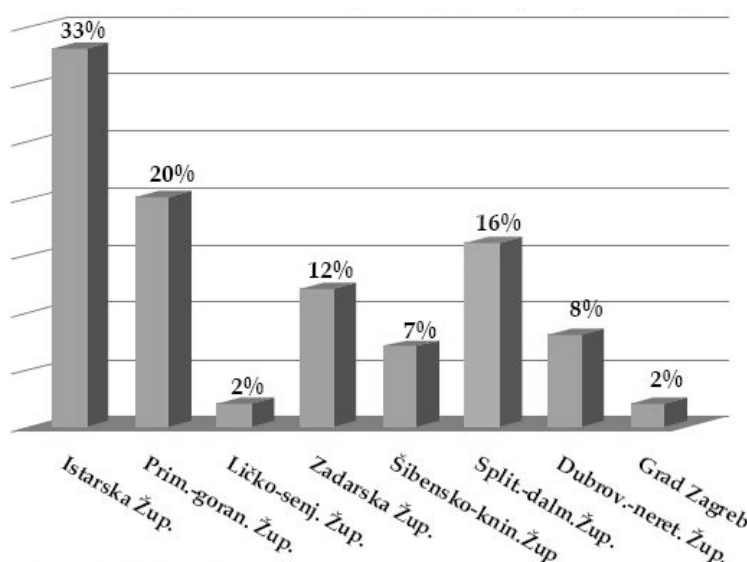


Figure I.2: Overnight stays comparison in some Croatian Counties (January-September 2007)

(Source: Croatian Bureau of Statistics)

Also, there were some changes in the tourists structure when compared to previous years. Namely, there was a decrease in the number of visitors from "traditional" destinations such as Germany and Italy, but there was a significant increase from some others such as the Benelux countries, Baltic countries, USA, Russia, and Spain. In the overnight stays structure the greatest percentage is attributed to the visitors from the Czech Republic (21%), followed by Germany (11%), Poland and Slovakia (8%), and Bosnia and Herzegovina (7%). Figure I.3 shows the distribution of foreign tourists with more than 5% share in the total number and overnight stays.

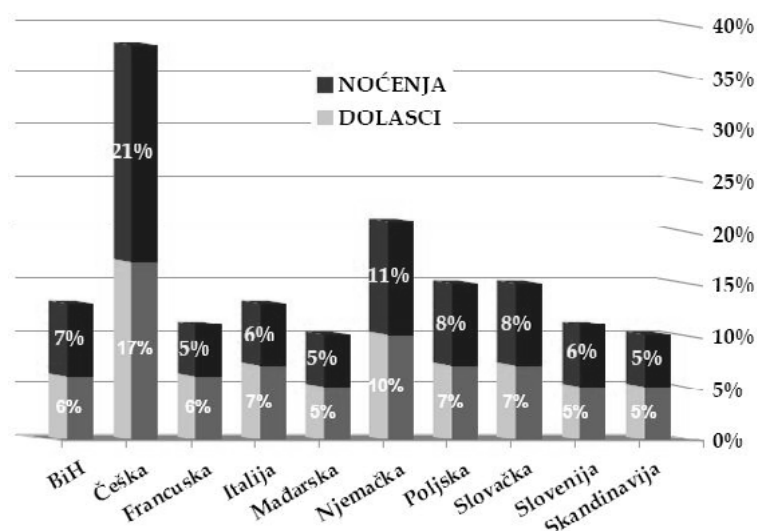


Figure I.3: The main emissive markets in the Split-Dalmatia County in 2007, according to overnight stays (Source: TZSDZ, 2007)

According to a survey performed by the Institute of Tourism (2005) on the sample of 1,105 tourists in 21 tourist destinations of the County, the profile of the tourists in the County could be summarised as follows:

- Tourists are in the age group of 25-35 (57.8% younger than 35); they have higher education; coming with the family (45.9%), mainly came more than three times (63.6%); 63.9% came by car;
- Most of the tourists come in the private arrangements (40.4%); 15% of tourists come as part of organised arrangements, which is higher than the Croatian average;
- The main reasons for selecting the destination were climate and nature beauty (more than 70%), value for money, cleanness and hospitality;
- 35.7% stayed 4-7 nights with an average expenditure 46.5 € per day; 82% of that expenditure was spent on accommodation, food and drinks. Even though this amount is below the Croatian average (49 € per day), this represents an 8% increase compared to 2001.

A continuing growth of the number of tourists and overnight stays in the County resulted in increasing investments in tourism development. In 2007, the planned tourism investments in the County totalled approximately 1.5 billion kuna. Out of these, the County planned the investment of 197.2 million, tourist boards 14.9 and hotel companies 1258.3 million (TZSDZ 2007).

The County investments were mainly in:

- infrastructure, roads, transports, improvement/maintenance of green areas and beaches; and
- maintenance of the cultural monuments, organisation of events, building the sports facilities, etc.

One of the focal points of the County's Tourist boards is marketing the tourism products of the County. In addition, a considerable portion of their budgets for 2007 was allocated for the "brown signalisation" (i.e. brown signs along motorways and roads announcing near-by cultural and natural monuments), maintenance (organisation) of beaches and settlements, and organisation of events. As part of the activities for cleaning and decorating the settlements and its bathing areas, a campaign called "Budi šesna i čista Dalmacija moja" (English: *Be Pretty and Clean, My Dalmatia*) is organised each year. Within this campaign, awards (Sunny Flower and Blue Flower) are presented to the cleanest and best decorated town and settlement.

The private sector, i.e. the hotel companies, were mainly investing in building new hotels and renovating the existing ones, mainly four and five-star facilities. Small and family hotels have, as of lately, become a big hit in Croatia. It is planned that by 2009, a 100 new small hotels should be built in Croatia, out of which 50 in the Split-Dalmatia County. A big help in that process is

provided by a number of incentives set up by the Ministry of Tourism, such as "Incentive for Success" (Croatian: "*Poticaaj za uspjeh*").

1.4.2.1 Tourism in Baška Voda

Based on tourism data (TZSDZ, 2007) for the first nine months in 2007 it can be concluded that the greatest number of tourists in the Split-Dalmatia County was registered in the town of Split, on the island of Hvar and in the municipalities of Seget and Baška Voda. While the greatest number of domestic tourists is mostly recorded at the Split riviera and in the hinterland, foreign tourists are mostly recorded at the Makarska riviera. The distribution of tourist arrivals to the destinations within the Split-Dalmatia County is presented in Figure I.4.

In addition, the Makarska riviera has recorded an 11% increase in overnight stays compared to 2006 which is cumulatively the biggest increase for the whole County. Compared to other destinations within the Split-Dalmatia County, the Makarska riviera (with its hinterland) contributes 46% of the total tourist overnight stays in the County (Figure I.5). Furthermore, the greatest number of overnight stays for foreign and domestic tourists for the first nine months of 2007 (within the Split-Dalmatia County) was recorded in the selected destinations of the Makarska riviera: Baška Voda, Makarska, Podgora and Gradac.

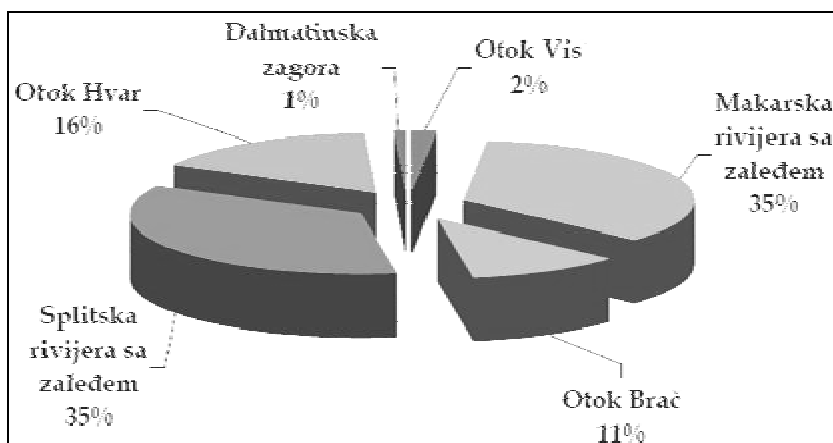


Figure I.4: Tourist arrivals in destinations within the Split-Dalmatia County in 2007
(Source: TZSDZ, 2007)

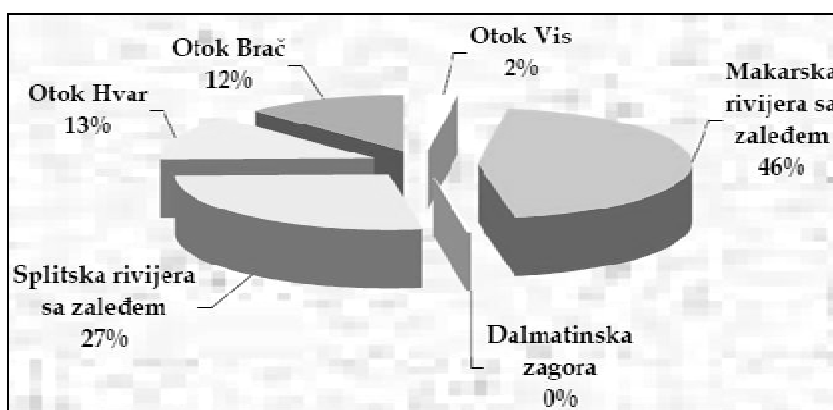


Figure I.5: Tourist overnight stays in destinations within the Split-Dalmatia County in 2007
(Source: TZSDZ, 2007)

According to statistical data of the Baška Voda Tourist Board for 2007, the Municipality of Baška Voda (that includes the settlements of Baška Voda, Baško Polje, Topići, Bast, Krvavica, Bratuš and Promajna) had a total of 117,090 visitors, out of which 106,327 were foreign and 10,763 domestic. Totally 822,280 overnight stays were recorded, out of which 750,317 were by foreign tourists. Also, 52.98% of visitors were recorded in private accommodation. However, it should be

noted that these are the official data. Namely, although the situation has changed since the 1990s when the majority of private tourist accommodation was illegal, unregistered private apartments, rooms and other types of accommodation still account for a significant share of the market. Therefore, it can be concluded that the real figures are much higher, especially in relation to private accommodation. Table I.7 shows the number of tourists and overnight stays in the past 10 years, as well as their distribution based on accommodation type.

In addition to the numerous private accommodation units, in 2007 the Municipality of Baška Voda had eleven hotels registered. These were: Horizont, Slavija, Hrvatska, Alem, Berulia, Baccus, Gađa, Conte, Dubravka, Uranija and apart-hotel Milenij. Also, in the area there is one resting-place and several camping sites. A detailed analysis of accommodation capacities is presented in Table I.8. Active in the area are twelve tourist agencies acting as intermediaries between guests and accommodation owners. These are: Duga, Adria Service, Kamis, Mariva Turist, Pluto Turizam, Bonavia, Dalmatinac, Berulia Travel, Tempet, More, Slavica and Bonton Tours.

The most important emissive markets for the area of Baška Voda are the Czech Republic (34.6% of all overnight stays in 2007), Slovakia (11.8%), Croatia (8.8%), Bosnia and Herzegovina (8.1%), Poland (7.7%), Germany (6.1%), Russia (3.0%), Slovenia (2.8%), Italy (2.3%), and Hungary (1.7%). When compared to 2006, the greatest increase in the number of visitors was from Russia (+76%), Poland (+74%) and Bosnia and Herzegovina (+56%). Increase in the number of tourists was also recorded for Slovakia (+21%), the Czech Republic (+12%), Austria (+7%) and Germany (+3%). Also comparing to 2006, an increased number of overnight stays was recorded for visitors from Russia (+64%), Poland (+58%), Bosnia and Herzegovina (+40%), Sweden (+13%), Slovakia (+13%) and the Czech Republic (+7%). At the same time, there was a considerable drop in the number of visitors from Great Britain (-30%), Hungary (-25%), Italy (-12%) and Croatia (-5%).

In order to make necessary preparations for the tourist season 2007, the Tourist Board of the Municipality of Baška Voda made some investments (besides marketing) in "brown signalisation", maintenance (organisation) of beaches and settlements, as well as organisation of events. Out of their budget, approximately 15,000 kuna was allocated for the "brown signalisation", 715,000 for beach and town maintenance, 160,000 for the organisation of cultural events, and 368,000 for marketing (TZSDZ, 2007). It is interesting to note that out of the planned investments in hotel adaptations and construction for the period 2007-2010, none is envisaged for Baška Voda.

A survey on tourists' perception of the quality of tourism offer of Baška Voda is undertaken yearly by the Baška Voda Tourist Board. In 2007, the overall perception score was lower than in 2006 (3.9 out of 5, compared to 4.1 in 2006). Individually, lower scores have been attributed to cleanness of the beach, entertainment opportunities, parking and traffic problems within the city centre, hospitality, etc. Improvements were recorded for accommodation and food offer. Details of the 2007 survey are available in Chapter 2.3.1.

Table I.7: Tourism figures for Baška Voda for the period 1997-2007
(Source: Baška Voda Tourist Board)

Year	Number of tourists			Overnight stays			Accommodation structure (% of no. of tourists)			Average length of stay
	Foreign	Domestic	Total	Foreign	Domestic	Total	Hotel	Private	Other	
1997			44,281			316,453	52.10	30.50%	18.40%	7.1
1998	41,533	19,316	60,849	303,923	134,066	437,989	51.60	23.70%	24.70%	7.2
1999	38,096	17,472	55,568	263,807	115,306	379,133	49.95	23.61%	26.44%	6.8
2000	71,604	14,340	84,944	504,065	96,826	600,891	36.31	31.84%	31.85%	7.0
2001	71,404	12,663	84,067	518,149	87,295	606,444	30.04	35.79%	34.17%	7.2
2002	70,479	11,943	82,422	476,977	73,009	549,986	33.38	40.60%	26.02%	6.7
2003	83,154	11,248	94,402	570,736	69,021	639,757	38.03	38.85%	23.12%	6.8
2004	77,838	10,225	88,063	528,329	59,147	587,476	38.25	38.19%	23.56%	6.7
2005	87,789	11,487	99,276	630,896	82,619	713,515	37.57	45.25%	17.18%	7.2
2006	88,314	11,300	99,614	651,969	67,993	719,962	39.10	46.20%	14.70%	7.2
2007	106,327	10,763	117,090	750,317	71,963	822,280	32.08	52.98%	14.94%	7.0

Table I.8: Accommodation capacities in the Municipality of Baška Voda (Source: Divić, 2006)

Settlement/ accommodation type	No. of objects	No of beds	Category				
			1*	2*	3*	4*	5*
BAŠKA VODA							
Hotels & b&b	14	2,923	47	2,032	279	567	
Rooms	1,224	2,730	453	290	1,987		
Apartments/Studios	459	1,363	60	102	1,201		
Apartments	208	916	129	162	583	42	
Houses	3	16		4	12		
Camps	2	3,530	30	2,500			
Other	7	314	87		227		
Total Baška Voda	1,916	11,790	806	6,090	4,289	609	0
PROMAJNA							
Hotel	1	100				100	
Rooms	377	860	239	86	535		
Apartments/Studios	135	401	33	32	336		
Apartments	43	160	16	23	117	4	
Houses	1	5			5		
Food International	1	21			21		
Total Promajna	587	1,547	288	141	1,014	104	0
KRVAVICA							
Rooms	91	208	54	30	124		
Apartments/Studios	29	85	8	6	71		
Apartments	14	61	6	10	45		
Total Krvavica	134	354	68	46	240		
BRATUŠ							
HEP resting-place	1	40	40				
Rooms	73	165	42	24	99		
Apartments/Studios	37	115		20	95		
Apartments	20	86	6	25	41	14	
Total Bratuš	130	406	88	69	235	14	0
TOTAL							
Hotels + b&b	15	3,023	47	2,032	279	660	
Rooms	1,765	3,963	788	430	2,745	0	0
Apartments/Studios	657	1,964	101	160	1,703	0	0
Apartments	284	1,218	157	220	781	60	0
Houses	4	21	0	4	17	0	0
Camps	1	3,530	30	3,500	0	0	0
Other	8	375	40		335		
Total	2,711	14,094	1,163	6,340	5,860	720	0

As previously described, Baška Voda is one of the most popular destinations of Dalmatia, as testified by numerous tourist awards the town has been continuously receiving these past years. In 2007, Baška Voda has won the Blue Flower award as the best organised settlement, fourth year in a row. In addition, it also won the Sunny Flower award for the best organised municipality in a County.

1.4.2.2 Beaches of Baška Voda

One of the most important tourism resources of Croatia, and particularly of Baška Voda are beaches. Namely, natural beaches are a rare resource in Croatia as most of the bathing areas along the Croatian coastline are rocky shores or artificial bathing areas. The Makarska riviera is known for its chain of natural pebble beaches that make it extremely attractive for tourists.

The Municipality of Baška Voda has a chain of pebble beaches almost 5 kilometres long, with a total surface area of more than 8km² (Table I.9). The town of Baška Voda has three main beaches: Nikolina, Uranija and Podluka. Out of these, Nikolina has been a Blue Flag beach since 2006. The analysis within this document will focus on those three beaches only (Chapter 2).

Table I.9: Public domain with beaches in the Municipality of Baška Voda (Source: Divić, 2006)

Settlement and beach	Public domain		Beach (m ²)
	Length (m)	Surface (m ²)	
Baška Voda			
Podluka-Ikovac	570	11,500	7,980
Nikolina	780	21,060	14,700
Uranija	620	10,540	7,400
Baška voda – total	1,970	43,100	30,080
Baško polje	700	21,000	16,800
Dječje selo (Children's village)	1,000	22,000	15,400
Promajna	480	16,800	14,900
Bratuš	300	3,000	2,500
Krvavica ¹	70	1,400	1,000
Total	4,520	107,300	80,680

1.5 Institutional and Legal Framework for Tourism and Coastal Management

1.5.1 Institutional Framework

Croatia has a remarkably long coast but, no organised management of such an important resource has been implemented so far. Several Ministries deal with particular issues regarding the coastal area: Ministry of Environmental Protection, Physical Planning and Construction; Ministry of Tourism, Ministry of Sea, Transports and Infrastructure; Ministry of Culture/State Institute for Nature Protection; Ministry of Agriculture, Fishery and Rural Development; and Ministry of Economy, Labour and Entrepreneurship. Among these ministries, there is overlapping of competencies, rights and responsibilities, which leads to lack of communication and absence of fruitful co-operation among them.

Currently, there is only one institution for the "management" of coastal areas, including beaches. It is a small Department for Protection of Sea and Land within the Ministry of Environmental Protection, Physical Planning and Construction (MEPPPC). It was established as one of the first institutional solutions of the sort in the Mediterranean. Unfortunately, instead of being utilised as the national leader for coastal management, it has simply remained another administrative office. Its main responsibilities are: (i) to co-ordinate monitoring of the quality of the sea; (ii) to propose measures to improve the state of coastal areas and coastal waters; (iii) to prepare assessments and propose programmes to eliminate the effects of the marine and coastal pollution; and (iv) to participate in the implementation of the MAP programme in Croatia. The Office is currently positioned at a low level in the MEPPPC hierarchy, with a predominantly advisory role (Trumbić *et al.*, 2005). This institution, although structurally underdeveloped, still offers a great potential for integrated management of the coastal areas of Croatia.

Croatia is also home to the Priority Actions Programme Regional Activity Centre (PAP/RAC), of the United Nations Environment Programme/Mediterranean Action Plan (UNEP/MAP) that was founded and settled in Split in 1979. Though its programme is focused on integrated coastal area management, its impact in Croatia is fairly small.

Croatia is known as a destination of "sea, sun and sand" and, therefore, coastal areas are crucial for its tourism development. In addition to solely "coastal", efficient institutions for tourism management are important for management of coastal resources as well. An important step in that direction has been undertaken in the beginning of 2008, when, with the new government mandate, the Ministry of Tourism was established. Namely, during the 2003-2007 Croatian Government mandate, the Ministry of Tourism was integrated in the large Ministry of Sea, Tourism, Transport and Development. Given the importance of tourism for the overall Croatian economy, the absence of a separate Ministry of Tourism was perceived as not fully efficient. Now

¹ Only 70 meters of beach in Krvavica is in the Municipality of Baška Voda; the rest is in the Municipality of Makarska.

that there is a separate Ministry of Tourism there is a new opportunity for additional strengthening of tourism management in Croatia. In addition to the national level (through the Ministry), structural decisions in tourism management are taken at the County and local levels through their (county and municipal) governmental departments. Finally, the Croatian National Tourist Board (CNTB) is a national tourist organisation founded in order to promote and create the identity of Croatian tourism, as well as to raise the overall quality of tourist services in Croatia.

1.5.2 Legal Framework

The most important document related to tourism management is the "Strategy of Croatian Tourism Development 2010" (2003). Also, the Institute for Tourism (2007) has prepared a "Study of sustainable cruising tourism development". A "Strategy for nautical tourism development of Republic of Croatia" is currently under preparation², but it is written in a strictly sectoral manner without taking into account other uses (PAP/RAC, 2007). Other important documents are the "Tourism Master Plan of the Split-Dalmatia County" (2006) and the "Regional Operational Programme of the Split-Dalmatia County (2006). In addition, there are a number of regulations dealing with the management of tourism, but those are mainly related to particular services within the tourism sector.

The legal and regulatory framework for the Croatian coastal area is characterised by the dispersion of competency regarding the management of the land and the sea. In addition, there are no special legal forms regarding the management of the coastal region as a whole. Still, there are laws and regulations that deal with *certain* specific issues of the coastal area, but those are not in harmony with each other (SDPNERC, 1998). The most important laws for the protection of the coastal land areas are the Spatial Planning and Construction Act (Official Gazette, 2007), the Nature Protection Act (Official Gazette, 2005), the Environmental Protection Act (Official Gazette, 2007), and the Islands Act (Official Gazette 1999). The Environmental Protection Act and its by-laws ensure that physical planning is undertaken with necessary environmental precautions. There are a number of regulations related to emissions in the environment, wastes, environmental information system, environmental protection emergency plan, etc. Maybe the most important by-laws are the Regulation on Environmental Impact Assessment (Official Gazette, 2008) and the Regulation on Strategic Environmental Assessment of Plans and Programmes (Official Gazette, 2008) that are the key instruments for assessing the environmental impact of any planned activity that may have spatial influence. The Regulations define the procedure for assessing the impacts, including the activities for which the assessment is necessary. In addition, there are 2 other documents that should also be taken into consideration: the National Environmental Strategy (Official Gazette, 2002), and the National Environmental Action Plan (NEAP) (Official Gazette, 2002).

All these regulations do not deal with the coastal area exclusively (except for the Islands Act), but the entire environmental system of Croatia. The recently adopted (2004) Regulation on the Protection of the Coastal Area defines, for the first time, in geographic terms, what the coastal area is (1,000 m landwards and 300 m seawards), and what activities will be given priority with respect to coastline location. In 2008, the updated Spatial Planning and Construction Act included the Regulation as its integral part.

Also, important regulations for the management of coastal areas are those dealing with spatial planning. These include the Spatial Planning Strategy of the Republic of Croatia (1997), the Spatial Planning Programme of the Republic of Croatia (1999), the Physical Plan of the Split-Dalmatia County (2007), and the Physical Plans of Makarska, Promajna and Baška Voda.

The new Spatial Planning Act, following the Ordinance on types of marine beaches and conditions each of those types has to satisfy (Official Gazette, 1995; without legal function any more), also defines two main types of beaches: natural and organised beaches. According to the Act, a natural beach is one that has all natural features with no facilities. Unlike natural, an organised beach is one that has a modified natural environment and main facilities (such as sanitary and safety ones). It should be pointed out that Croatian regulations also consider rocky shores and artificial bathing areas (such as concrete shores) as organised beaches. However, geologically, only sandy, pebble, gravel and cobble coastal areas could be considered as beaches.

² Its final adoption is expected by the end of 2008.

In addition to the Physical Planning Act, the management of bathing area of Croatia is currently regulated by two main legal documents: the Regulation on Sea Bathing Water Quality (Official Gazette, 2008³) and the Law on Public Domain and Marine Ports (Official Gazette, 2003). It should be pointed out that these regulations emphasise that beaches are of public domain that is accessible to all under the same conditions. This point should particularly be taken into consideration when applying instruments for improved management of bathing areas, such as entrance fee.

Beaches are part of the public domain. This means that these cannot be private property under any circumstances. However, they could be subject of concession. The Law on Public Domain and Marine Ports (Official Gazette, 2003), based on the Marine Code (Official Gazette, 1994) defines conditions for giving concessions for utilisation of public domain. The Law distinguishes concession and concession allowance. In addition, the Croatian legal system encompasses two regulations: the Regulation on Concessions (Official Gazette, 2004) and the Regulation on Concession Allowances on Public Domain (Official Gazette, 2004). The latter refers to any type of commercial activity that could be undertaken in the coastal area, such as renting umbrellas, deck-chairs and recreation facilities, providing catering services and alike. Concession allowance can be given for a period of up to 5 years by the Council for Concession Allowances, established within the Municipality covering the given public domain. A concession is a legal right that enables total or partial exclusion of the public utilisation of the public domain in order to obtain commercial utilisation. Generally, the County council approves concessions. However, in some cases, it can be approved by the relevant Municipality or the State. Concessions could be given for a period of 5-99 years. In order to obtain a concession, one needs to be a legal entity. Also, it is necessary to present a study on economic validity of the proposed activity/utilisation of the public domain. Finally, the concession for a given public domain can be given only if the public domain is registered as such in official documents, all in accordance with the physical planning documents.

Finally, beaches form an important natural habitat, and therefore the Ordinance on Habitat Types, Habitat Maps, Threatened and Rare Habitat Types and Measurements for Protection of Habitat Types (Official Gazette, 2006) should also be considered, especially if any interventions (such as nourishment) are planned to be done on/with the beach.



³ Entering into force on January 1st, 2009; until that date the Regulation on Water Quality Standards on the Marine Beaches (Official Gazette, 1996) is legally bounding.

II. Analysis

2.1 Introduction

One of the first steps in the process of preparing the beach management strategy (Chapter 3) was to analyse the current state of the beaches of Baška Voda and their management. It was done during the summer of 2007 through the process of tourists' (beach users) perception survey, and through direct assessment of bathing areas. These data were used as inputs for the Strategic Plan of Sustainable Beach Management.

2.2 Methodology

Within the process, three different analyses were done:

- public perception survey;
- beach area registration and evaluation; and
- beach carrying capacity assessment.

The public perception survey was done first, on a selected sample of beach users in Baška Voda. They were asked about their perception of the beach environmental and recreational conditions. Also, an expert analysis of the current state of the beaches was done. Each bathing area was assessed based on their water quality, scenery, facilities, litter and safety elements. Finally, the beach carrying capacity, that encompasses the physical, ecological and social carrying capacity, was calculated

Each of these analyses gives one aspect of the state of the Baška Voda beaches. The full assessment of the bathing area could only be done with the integrated approach, which takes into consideration the users' perception of the beaches, their current management, and the total capacity of the beaches as the ability to accommodate the greatest number of people without jeopardising the ecological values of the beach, its scenic values and socio-economic benefit. Furthermore, this analysis takes into consideration the current physical planning system, as the Strategic Plan for sustainable beach management should be fully compatible and in line with the County Physical Plan and the Physical Plan of Baška Voda.

2.3 Public Perception Surveys

For the analysis of the bathing areas of Baška Voda, the results of two types of surveys were taken into consideration: tourist surveys undertaken by the Tourist Board Office of Baška Voda and the UNEP/PAP survey undertaken in summer 2007.

2.3.1 Tourist Surveys Undertaken by Tourist Board Office of Baška Voda

In order to analyse the economic and social structure of visitors, as well as their opinion on the quality of the tourism product, the Tourist Board Office of Baška Voda has been undertaking yearly tourism perception surveys since 1996. The surveys are being done in collaboration with the local hotels and private accommodation facilities, where guests are asked to fill in and submit appropriate questionnaires. The tourists are first asked about their place of stay, why and how they arrived, as well as the number of times they visited Baška Voda. Then they are asked to evaluate (on the scale of 1 to 5, 1 being the lowest and 5 the highest score) the elements of tourism offer, mainly the town itself (infrastructure, natural features, politeness, etc.) and the accommodation (comfort, cleanness, food, hospitality, etc.). Finally, they are asked their opinion of value for money, what is the most positive and what is the most negative aspect of tourism of Baška Voda, and if they plan to return again.

In 2006, 186 respondents filled in the questionnaire. They mostly came from the Czech Republic (59%), Slovakia (14%) and Germany (8%), followed by guests from Croatia (5%), Bosnia and Herzegovina (3%), and others. According to the type of accommodation, 74% of the respondents were using private accommodation and 26% the hotels. In total, the final "score" of the destination was better than in 2005 (+0.1). Out of 21 elements of the tourism offer, the nature

beauty and landscape were rated among the top two. Environmental arrangements were rated as seventh, cleanness of the beach as eighth, while the cleanness of the sea was twelfth.

Part of the elements were evaluated better than in the previous years, such as sports activities on the beach (score 3.7; 1.5% increase) or cleanness of the beach (score 4.3; 0.2% increase). Out of the elements that were evaluated worse than in the previous years the cleanness of the sea should be pointed out, with the final score of 4.1, which was a 0.3% drop when compared to the previous years. The most common general critical observations related to traffic, absence of public toilets, crowded beaches, litter on beaches, etc.

However, taking into consideration that there are more than 8,000 tourist beds available in Baška Voda, and that no structured sampling was used when undertaking these surveys, it should be pointed out that these results provide very good indications but should still be taken into consideration with some reservation. Building upon these results, within the Pilot UNEP/PAP project, an additional survey was done, focusing on the perception of beach users. The field research was undertaken by the Association for Nature, Environment and Sustainable Development "Sunce".

2.3.2 UNEP/PAP Perception Survey of 2007

Systematic sampling was used for the purpose of the UNEP/PAP survey. This type of sampling is often used instead of random sampling. It is also called an Nth name selection technique. After the required sample size has been calculated, every Nth person is selected from a list of population members. The procedure involves estimating the needed sample size and dividing the number of names on the list with the estimated sample size (Mertens, 2005).

The sample was determined based on the "maximum" number of tourists and locals that could be detected on the beach at a given time. The number was estimated based on the sum of the total number of beds (officially recorded) available in Baška Voda and the number of residents. The total number of target population was estimated at 10,500. Based upon the time and resources available, as well as the target population number, it was decided to use the sample size of 550. In order to achieve that sample size, the interviewers were selecting (interviewing) every 19th person in the bathing area (including the people in the sea and in the beach bars and restaurants).

The survey was undertaken on only three beaches of Baška Voda (excluding the nearby villages such as Promajna, Bratuš, Krvavica and Baško Polje), due to the restricted time and funds available.

Questionnaires were prepared in English and Croatian languages, with a total of 11 questions, excluding the demographic questions (Appendix I). Questions were mainly closed ones with four open-ended questions. Also, in most of the questions, respondents could select multiple answers.

The main objective of this survey was to identify the opinion of the beach users in Baška Voda (locals and tourists, including one-day trippers) on what both positive and negative aspects of the Baška Voda beaches are. One of the specific objectives of the survey was also to find out whether they would be willing to pay for the improvement of the negative aspects of the beaches. Based on these results some concrete management measures could be drawn.

In total, 550 beach users were interviewed and questionnaires distributed. Out of these 550, 11 were not properly filled out so only 539 could be considered for evaluation. The interviewees were asked some basic demographic questions, such as their sex, age and nationality. Out of all respondents, 43.4% were male and 56.6% female. The majority of the respondents were in the 25-34 years age group (35.6%) and only 1.1% were older than 65. Sex and age distribution on the three evaluated beaches are shown in Tables II.1 and II.2.

Table II.1: Sex distribution among respondents on three evaluated beaches

Sex	Number of people on beaches			
	Podluka-Ikovac	Uranija	Nikolina	Total
Male	63	48	123	234
Female	78	55	172	305

Table II.2: Sex distribution among respondents (in percentages) on evaluated beaches

Sex	Percentage of people on beaches			
	Podluka-Ikovac	Uranija	Nikolina	Total
Male	44.7%	46.6%	41.7%	43.4%
Female	55.3%	53.4%	58.3%	56.6%

Even though the 2006 survey, undertaken by the Tourist Board Office, showed that a majority of tourists came from the Czech Republic (59%), Slovakia (14%) and Germany (8%), and only 5% from Croatia and 3% from Bosnia and Herzegovina, according to the beach users' survey (UNEP/PAP), it turned out that a majority of bathers were from Croatia and Bosnia and Herzegovina (detailed analysis on beach users nationality is presented in Table II.3).

Table II.3: Beach users' distribution on the three evaluated beaches based on their nationality

Nationality	Nationality percentage on beaches		
	Podluka-Ikovac	Uranija	Nikolina
Austria	2.1%	1.0%	1.7%
Bosnia and Herzegovina	24.8%	18.4%	27.8%
Canada	6.4%	20.4%	10.5%
Croatia	0.0%	0.0%	0.3%
Czech Republic	1.4%	1.0%	0.0%
Denmark	1.4%	0.0%	0.3%
Finland	34.8%	25.2%	28.5%
France	0.0%	0.0%	0.7%
Germany	1.4%	1.0%	2.0%
Hungary	0.0%	0.0%	0.3%
Ireland	0.0%	0.0%	0.3%
Italy	0.0%	1.0%	1.0%
The Netherlands	0.0%	1.0%	0.3%
Norway	7.1%	1.0%	7.0%
Poland	2.1%	1.9%	4.1%
Russia	0.7%	1.9%	0.0%
Serbia	0.7%	0.0%	0.0%
Slovakia	4.3%	9.7%	10.5%
Slovenia	4.3%	5.8%	2.4%
Sweden	5.0%	4.9%	4.4%
UK	1.4%	1.0%	1.4%
Ukraine	1.4%	1.0%	0.7%
USA	0.7%	1.0%	0.0%
Undisclosed	0.0%	0.0%	0.3%

Such discrepancy in the results could be explained by a number of reasons:

- The questionnaires were prepared in English and Croatian languages. Because of that, a number of tourists, mainly Italian, could not be included as they did not understand those languages. This resulted in a number of rejections to participate in the survey. Still, a majority of Czech and Slovak tourists used the Croatian questionnaires so it can be concluded that their number (percentage) on the beach was not significantly different from the one resulting from the analysis.
- Within the Tourist Board survey, there was no predetermined sampling method so questionnaires were filled in only by those respondents that decided to do so. Such "sampling" is often biased and can show the results that do not reflect the reality.
- Also, the survey undertaken by the Tourist Board was focused on the tourists staying at officially registered accommodation facilities (mainly hotels, apartments and registered private accommodation). Knowing that at least 50% of tourist private accommodation facilities are unregistered, it is possible that a great number of Croatian and Bosnian tourists are accommodated within such apartments, and were thus not included in the Tourist Board survey.
- Baška Voda is "known" as a destination for day trippers, mainly from Croatia and Bosnia and Herzegovina. This can lead to the conclusion that the discrepancy in survey results

between the Tourist Board and UNEP/PAP is due to that reason (i.e. Croatian and Bosnian visitors could not be recorded as tourists as they were actually day trippers, i.e. not staying in any type of accommodation). However, according to the UNEP/PAP survey, only (approximately) 16% of beach users were coming on a daily basis (see the paragraphs below). This indicates that the difference in the results could not be due to that reason. It could also indicate that the perception on Baška Voda as mainly "one-day-destination" is not entirely correct. Finally, this also suggests the need for a more comprehensive survey on tourists (structure, perception, etc.).

It should also be stressed that a number of respondents that "presented" themselves as being from the Netherlands, Germany, Austria or Sweden were actually Croats or Bosnians by nationality but living in those countries.

Even though the objective of this survey was not to identify the structure of the tourists in Baška Voda and the type of accommodation they are using (as yearly surveys undertaken by the Tourist Board Office in Baška Voda identify the profile of tourists), the respondents were also asked about their accommodation. The objective of this question was to identify the percentage of visitors based in Baška Voda (for more than 1 day), and to distinguish them from one-day trippers. Namely, there is a perception that all of the Makarska Riviera beaches are under severe pressure from one-day visitors that utilise the natural resource (i.e. the beach) without leaving an "adequate" economical compensation for their utilisation. It should be pointed out that a majority of respondents filled in this question, but there were some that refused to do so. Taking this into consideration, as well as the responses on some other questions (such as question 4; see Appendix I), it could be concluded that approximately 84% of all interviewed beach users were settled in Baška Voda for more than one day. However, as stated before, a more detailed survey on these issues should be undertaken to fully support this statement.

The first three questions were introductory, dealing with the reasons why people came to Baška Voda. According to their answers, the main reasons were nature beauties (33.3%) and the quality of the beaches (29.9%). The detailed analysis is presented in Tables 2.4 and 2.5. From the results it is clear that, in general, they were satisfied with the tourism quality (81.8%). But what they were not satisfied with was value for money (low quality of services, food, (im)politeness of the staff working in restaurants, etc.).

Table II.4: Reasons for selecting the destination

1. Why did you choose BV for your holiday destination?	Number of respondents within the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
1a. Good recreational activities	25	30	51	106
1b. Quality of accommodation	21	19	64	104
1c. Gastronomic quality	19	14	35	68
1d. Quality of beach	80	55	141	276
1e. Nature beauties	86	66	155	307
1f. Other	9	16	36	61

Table II.5: Reasons for selecting the destination (expressed in percentages)

1. Why did you choose BV for your holiday destination?	Percentage of respondents within the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
1a. Good recreational activities	10.0%	15.0%	10.6%	11.5%
1b. Quality of accommodation	8.8%	9.5%	13.3%	11.3%
1c. Gastronomic quality	8.0%	7.0%	7.3%	7.4%
1d. Quality of beach	33.4%	27.5%	29.2%	29.9%
1e. Nature beauties	35.9%	33.0%	32.1%	33.3%
1f. Other	3.9%	8.0%	7.5%	6.6%

The reason why visitors selected the particular beach is mainly due to clean sea, but also to the vicinity of their accommodation. Detailed information is presented in Table II.6.

Table II.6: Reasons for selecting the particular beach

4. Why did you come to this beach?	Percentage of respondents on the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
4a. Good recreational facilities offered	15.5%	16.2%	15.1%	15.4%
4b. Near hotel/accommodation staying	29.6%	24.5%	30.7%	29.2%
4c. Clean sea	46.5%	49.7%	45.6%	46.6%
4d. Adequate/convenient parking	2.8%	1.8%	3.0%	2.7%
4e. Safety	2.3%	4.2%	4.8%	4.1%
4f. Other	3.3%	3.6%	0.8%	2.0%

In general, bathers were satisfied with the environmental quality of the beach. However, 10% of the respondents were not satisfied. This is mainly due to the lack of trees and natural shadow, litter on the beach (cigarette butts), etc. Table II.7 gives detailed information.

Table II.7: Satisfaction with the beach environmental quality

5. Satisfied with the beach environmental quality?	Percentage of respondents on the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
5a. Very satisfied	37.6%	18.4%	24.0%	26.5%
5b. Satisfied	56.0%	57.3%	62.0%	59.6%
5c. Not satisfied	2.9%	16.5%	8.5%	8.5%
5d. Very unsatisfied		3.9%	1.4%	1.5%
5e. Indifferent	3.5%	3.9%	4.1%	3.9%

Similarly, the respondents were mainly satisfied with the beach facilities (75.9%). Still they pointed out few toilets and inadequate showers as the key problems. The problem of crowdedness was not specifically investigated. Even though the bathers could mention it as their objection within the question 8, only few actually did. Even if they mentioned it, they pointed it out in the context of inadequate placement of deck-chairs (i.e. they are too close to the shoreline). Detailed information is given in Table II.8.

Table II.8: Zadovoljstvo kvalitetom plažnih sadržaja

7. Satisfied with the quality of beach facilities?	Percentage of respondents on the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
7a. Very satisfied	25.6%	18.4%	17.0%	19.5%
7b. Satisfied	46.8%	57.3%	60.7%	56.4%
7c. Not satisfied	15.6%	10.7%	11.5%	12.4%
7d. Very unsatisfied	3.5%	4.9%	1.7%	2.8%
7e. Indifferent	8.5%	8.7%	9.1%	8.9%

Even though a majority of beach users stated that they were satisfied with the environmental and recreational conditions on the beach, more than 60% (62.5%) stated that they would be willing to pay for the improvement of the bathing areas quality (Table II.9). This indicates that, even though they claimed to be satisfied there were still some things they were not fully satisfied with. They are mainly interested in improving the sanitary conditions, natural environment and cleanness of the beaches (Table II.10).

Table II.9: Type of improvement on the beach, users are willing to pay for

9. Willing to pay to improve the beach quality?	Percentage of respondents on the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
9a. Yes, as entrance fee	15.6%	15.5%	12.2%	13.7%
9b. Yes, as obligatory facilities utilisation	9.9%	12.6%	13.2%	12.3%
9c. Yes, as voluntary facilities utilisation	29.1%	34.0%	27.1%	28.9%
9d. Yes, as additional (higher) parking fee	9.2%	4.9%	7.8%	7.6%
9e. No	36.2%	33%	39.7%	37.5%

Table II.10: Type of improvement on the beach, users are willing to pay for

10. For which type of improvement are you willing to pay?	Percentage of respondents on the beach			
	Podluka-Ikovac	Uranija	Nikolina	Total
10a. Litter collection	22.8%	26.9%	26.3%	25.5%
10b. Natural environment	25.0%	34.6%	26.7%	27.9%
10c. Increased number of lifeguards	14.7%	5.8%	16.0%	13.5%
10d. Improved toilet facilities	36.8%	29.8%	30.2%	31.9%
10e. Other	0.7%	2.9%	0.8%	1.2%

In terms of the payment instrument for such improvements, it can be concluded that a voluntary utilisation of facilities would be the preferable option (28.9%) for the beach users in Baška Voda, while additional parking fee was the least preferable option (7.6%).

Only a small number of respondents actually responded on "*how much they are willing to pay*". It ranged from 2 to 200 kunas (30 cents to 30 Euro) per day. Still, a majority of responses were between 1 and 2 Euros (approximately 10 kunas).

However, if any economic instrument is considered for introduction, a more in-dept survey on the users' perception and willingness to pay should be undertaken.

2.4 Beach Management

The beach has a primary importance for the bulk of holiday tourists. This comment has been shown to be true by papers written by a host of authors (CC, 1987, 1993; CCW, 1996, 2001). Beaches bring in tourists, which equates to money.

For example, Houston (1995, 1996, 2002) pointed out that Miami Beach spent *circa* \$70 million on beach nourishment, which, in return, brought some US\$ 2 billion annually from foreign tourists alone. Similarly, Micallef *et al.* (2001) have calculated that sand nourishment of a beach at St George's Bay (Island of Malta, Malta), would bring a 13% increase in nearby public property values and a 1% increase in hotel property value. Translated in monetary value, it is up to a US\$ 6 million increase in local property values.

It is calculated that the beaches of USA may be responsible for an annual income of over US\$ 170 billion. Similarly, the gross economic value of beach tourism and recreation was estimated at US\$ 637 million, or 57% of the total gross economic value of tourism and recreation resources of the New South Wales coast (James, 2000).

Also, Spain is one of the most important tourist destinations in the Mediterranean and in the world. In 2003, tourism accounted for 11.4% of the Spanish GDP. Taking into consideration that the tourism concept in Spain is still oriented toward "sea, sun and sand" model, it can be concluded that beaches are one of the most important assets of the country. Namely, beach tourism in Spain is responsible for approximately 74% of foreign tourism (Yepes, 1998 in Silva *et al.*, 2007). The same conclusion can be drawn for Croatia as well.

The high human value placed on beaches has been reflected in rapid urbanisation of these areas, and over 70% of the world's population lives in the coastal zone (Nelson *et al.*, 2000). In the Auckland region of New Zealand, beaches have been found to be the most important contributor to the quality of life (Forsyte Research, 2000). Houston (2002, p6) concluded that "travel and tourism is America's largest industry, employer and earner of foreign exchange, and beaches are the largest factor in travel and tourism."

With increasing demand for leisure opportunities, beach environments figure highly in any social valuation of coastal recreational amenities, the latter often seen as a safe recreational environment that is enjoyed by a wide spectrum of society (adults and children visiting as individuals, couples, families, overseas and local holiday-makers).

By definition, beach management "seeks to maintain or improve a beach as a recreational resource and a means of coast protection, while providing facilities that meet the needs and aspirations of those who use the beach" (Bird, 1996, p212.). In this context, the impact of sound

beach management may be seen as an effective utilisation of an increasingly valuable (socio-economic and ecologic) national resource, but emphasises recreation. It may also lead to encouragement of overseas tourism, an increase in quality for local recreational opportunities and an enhancement of nearby urban settlements (Micallef and Williams, 2002). However, Simm *et al.*, (1995) have described beach management as the process of managing a beach in a way that ensures nature conservation, beach maintenance, public amenity and industrial objectives, within available finances. This definition reflects the importance of sustainable management that ensures effective utilisation of an increasingly valuable (natural and socio-economic) national resource.

In practice, beach management may be seen to address socio-economic and environmental considerations (Breton and Esteban, 1995) as well as engineering aspects largely related to sediment dynamics (US Army Corps of Engineers, 1984; Carter, 1988; CIRIA, 1996; Bird, 1996). Beach rating procedures (e.g. Chaverri, 1989; Williams and Morgan, 1995) and award schemes (e.g. Blue Flag, accessed in 2007; Green Coast Award – Nelson & Botterill, 2002) tend to either focus on single or few issues of concern to beach users or to ignore the nature of varying beach types and individual beach type requirements. When speaking about award schemes, it is worth mentioning the "importance" of the European Blue Flag in Croatia. In 2005, 80 beaches were awarded the Blue Flag. Such beaches are promoted as the ones with the "highest safety, ecological and tourist standards" (HCK, accessed in 2006). Still, some evidence has shown that Blue Flag beaches are not always the cleanest, safest or with the best water quality. For example, the "Laguna" beach in the northern part of Croatia has the Blue Flag award, but the water quality of the beach has been scored as Orange/Red, according to the EU Bathing Water Directive (CEC 1976), during several monitoring periods in 2005.

Beach awards are used worldwide as a promotional tool for beaches, but information regarding public knowledge of them is sparse. Studies carried out at important UK resorts, e.g. at Barry and Weston-super-Mare, have shown that, even though beach users stated that beach awards were an important parameter for choosing the beach (72% out of a total of 700), only 18.6% beach users understood the meaning of the flag flying on the beach (i.e. beach award flag) and 16.9% of users questioned on beaches in Wales thought it was a sign for danger (Nelson *et al.*, 2000).

Based on subjective experiences gleaned from talking to beach users during 2005/2006 field work, it was found that Croatian residents and tourists were not aware of the beach flag and what it really meant. No actual objective data was obtained to support this hypothesis, so further Croatian studies must be carried out.

2.4.1 Bathing Area Registration and Evaluation (BARE) System

Repeated surveys have shown that five factors are extremely important in determining a successful beach holiday (Micallef and Williams, 2002). These are safety, water quality, facilities, scenery and litter. A novel system for beach evaluation (developed in 2001) – the Bathing Area Registration and Evaluation (BARE) system, follows these findings and evaluates bathing areas according to the above-mentioned five parameters (Micallef *et al.*, 1999; 2004; Micallef and Williams, 2002) that are differently applied to different beach types (Appendix II).

The BARE system classifies beaches into five main categories, based on their accessibility and coastal scenery: remote, rural, village, urban and resort bathing areas:

- Remote beaches are not easily accessible, they are far from urban areas and there are generally no facilities or buildings near the beach (max. 0-5);
- Rural beaches are far from urban areas; they are not accessible by public transport; there are no facilities, smaller building may be present (1-10) but not as houses of residence;
- Village beaches are situated outside the urban areas, but connected to smaller settlements; toilets, showers and/or some other facilities may be found at the beach;
- Urban beaches are located in towns/cities and have various beach facilities;
- Resort beaches are most frequently situated within a hotel area or managed by it; they are usually utilised by the hotel guests; their main feature are numerous facilities.

Depending on the beach type, different parameters, of the five above mentioned, are applied. Namely, in resort, urban and village bathing areas all five parameters are applied, while in rural and remote bathing areas only water quality, scenery and litter are applied. Furthermore, parameter prioritisation is a function of beach type, i.e. in a resort area, the first three parameters are deemed to be the most important; in a remote area, scenery and litter take precedence. The choice and order of priority of parameters considered for the bathing area classification system was ascertained on the results of literature surveys concerning beach management guidelines and view-points expressed by beach-user questionnaire/beach rating surveys (e.g. Chaverri, 1989; Morgan *et al.*, 1993; Williams & Morgan, 1995; Morgan *et al.*, 1996; Williams & Davies, 1999; Micallef *et al.*, 1999; Williams *et al.*, 2000, Ergin *et al.*, 2004).

Safety parameters are recorded using a check-list approach which refers to presence/absence of lifeguards, fixed safety equipment, first-aid posts, swimming safety warning notices, bather/boat zoning marker buoys and a safe bathing environment.

Water quality evaluated by BARE records the most recent national bathing water quality monitoring results. This rating scheme applies solely to resort, urban and village-associated beaches; for the rural and remote bathing areas visual observation is used.

Registration of bathing area *facilities* utilises a checklist approach to determine presence/absence of the number of sanitary, catering and recreational facilities, such as toilets, showers, umbrellas, deck-chairs, changing booths, waste bins, restaurants, bars, sports facilities and alike. It should be pointed out that adequacy of such facilities is determined in relation to the bathing area's carrying capacity and occupancy rates. However, carrying capacity is a complex issue and consensus is not easy to obtain (da Silva, 2002).

Coastal scenery involves assessing and rating 26 coast-related parameters, each sub-divided into 5 categories. The overall rate for scenery is calculated based on the rates of all 26 parameters.

Litter is recorded and scored according to the EA/NALG (2000) Protocol, that involved surveying a 100 m stretch of a beach (50 m each side of an access point), assessing the amounts of litter in the area between the high water strand line and the back of the beach. Litter is recorded based on the following litter categories: sewage related debris (feminine hygiene products, contraceptives, toilet paper, fatty deposits, identifiable faeces of human origin and cotton bud sticks), gross litter (such as shopping trolleys, pieces of furniture, large plastic or metal containers, bicycles, prams, tyres, etc), general litter (drink cans, food packaging, cigarette packets and any other items), potentially harmful litter (sharp broken glass, medical waste, sharps, soiled disposable nappies, dead domestic animals, other dangerous products such as flares, ammunition and explosives), accumulations, oil and oil like substances, non human faeces and other items.

Each of the five BARE components is evaluated on an A-D scale (A representing the highest quality, D representing the lowest quality). Considering the beach type and the mentioned criteria for the individual components, the beach is rated on the scale from 1 to 5 stars (1 star representing the lowest bathing area quality and 5 stars representing the highest bathing area quality).

The BARE system has been applied in Croatia since 2003. The first pilot evaluation was done by WWF and the environmental association "Sunce" in spring 2003, followed by additional research undertaken by PAP/RAC. From May 2005 to November 2006, "Sunce" was evaluating beaches along the entire Croatian coastline. In total, 240 beaches were evaluated to determine the general condition of the bathing areas of Croatia. As a result of that study, it was proposed to introduce the principle of sustainability into beach management programmes, as a well-structured beach evaluation directly contributes to sustainable development of bathing resources.

The methodology itself gained recognition by the Croatian Ministry of Environmental Protection, Physical Planning and Construction, and was included into its yearly publication on water monitoring in Croatia (MZOPU, 2007).

2.4.1.1 Application of BARE in Baška Voda

During the summer of 2007, the BARE methodology was applied to the bathing areas of the town of Baška Voda: Uranija (*Južna plaža II* – South Beach II), Nikolina and Podluka – Ikovac (*Zapadna plaža* – Western Beach). The municipality of Baška Voda includes other bathing areas in the villages such as Promajna, Bratuš, Krvavica and Baško polje. However, these were not included in the study which dealt only with the bathing areas directly gravitating to the town of Baška Voda.

The survey was done in the period July-September 2007. First, a rapid assessment was made in the beginning of July, when a quick overview on the position, beach composition and key issues was made. The detailed study took place on the 5th of August (being a Sunday and a national holiday), considered as the peak of the season. However, the weather conditions were not favourable, so additional surveys took place on the 7th of August, as well as in the beginning of September.

When assessing the beach quality, some background information was gathered first. It included the type of beach, its length, width, shape and slope, beach sediment characteristics and shore type, accessibility to the beach, signs of erosion, beach occupancy, main usage of the beach, and presence of designated sensitive area within the bathing area. Then, information related to the five evaluating factors was gathered. It should be pointed out that the information related to water quality included the overall results of the sea bathing water quality monitoring undertaken by the Croatian Ministry of Environmental Protection, Physical Planning and Construction of 2006. This is due to the fact that the overall 2007 results had not yet been published by the time this pilot project was implemented and completed. Individual results of the 2007 monitoring could not be taken into consideration as they would not give the full spectrum of water quality results for the bathing season.

Finally, even though Baška Voda is not considered a town but a commune⁴, all the beaches of Baška Voda that were evaluated were treated as urban beaches. This is due to the fact that more than 10,000 people gravitate to these beaches. This calls for a high-quality beach maintenance, ensuring adequate facilities, safety and water quality that is expected on urban beaches. Furthermore, urban beaches are usually placed in the vicinity of a marina and a business centre. As these elements could be found in Baška Voda, its beaches could be characterised as urban ones.

2.4.1.2 Results

Uranija is the southernmost beach of Baška Voda. It stretches all the way to the border with Baško Polje. As elaborated in the previous paragraph, Uranija could be considered an urban beach.

Like other beaches of Baška Voda, Uranija is a natural beach, 620 meters long, with an average width of 12 meters⁵. Considering its geological composition, it is mainly a gravel/pebble beach with approximately 30% wooded and 70% urban beach backshore and immediate hinterland. There are some traces of erosion on the beach but there are no recent records or erosion maps available that could help appropriately assess and mitigate this issue.

Of the safety parameters, Uranija has a safe bathing environment, which includes low bathing environment slope, wave heights of less than 0.5 m for at least 80% of the bathing season and absence of rip currents (outside storm conditions). It also has bathing/boating zoning markers, while there is absence of lifeguards, fixed safety equipment and beach information notices (such as presence of rip currents, records on water quality monitoring, etc.). This resulted in the final score C for safety.

⁴ To be considered a town, a settlement has to have at least 5,000 inhabitants, while the whole municipality of Baška Voda has 2,924 inhabitants, and the settlement itself has 2,045 inhabitants (DZS, 2001).

⁵ Different documents show different lengths and widths of beaches. Due to the sea movement in different seasons it is recommended to use orto-photo images (or another tool) from winter and summer periods to analyse the surface difference. Also, it is recommended to use the "summer" results (often having less surface) as reference points.

The final result for the water quality (B), follows the overall result of the Ministry monitoring of 2006, which is *green quality* that corresponds to "good bathing quality sea" (MZOPUG, 2007).

The evaluated facility elements include accommodation in the bathing area (that refers to the beach, together with the 500 m radius from the beach), toilet facilities, shower facilities, fresh water tap, restaurants/snack bars/cafés on the beach and in the bathing area, waste bins, sun-beds and umbrellas, water-based and other sports facilities, parking facilities, and some other elements such as wheel chair accesses, etc. There are three hotels in the beach vicinity (aparthotel "Milenij", hotel "Hrvatska" and hotel resort "Uranija"), out of which the hotel "Milenij" is a four-star establishment, while the other two have only two stars. In addition to these there are numerous accommodation facilities including private apartments, rooms, and B&Bs. Only two toilets could be found on the 620 meters long beach. Out of these two, one was poorly managed while the other was out of order at the time of evaluations. The approximate distance between these two is 400 meters, which is considered inappropriate (according to some studies, people are not willing to walk more than 250 meters on the beach, da Silva 2002). Also, two showers were found on the beach, of which one was out of order and the other had rather low pressure, and there were no fresh water taps. Two cafés were found on the beach, but no restaurants. There were numerous waste bins along the beach, all regularly emptied. On the beach it was possible to rent plastic deck-chairs, but there was no arranged distance among them. A number of changing booths could be found along the beach. Offer of water-based sports facilities was down to some speed boating elements (i.e. banana, tubing and water skiing), and jet ski could be rented. The only other sports facility is a volleyball field. Parking is not adequate for the beach: there is no managed parking lot nearby, and only approximately 150 parking places are available along the beach itself. It should be pointed out that this beach is "dog-friendly", i.e. dogs are allowed on the beach. This is one of the few comparative advantages of this beach, as very few beaches (especially in the tourist destinations along the Dalmatian coast) have this possibility. Mainly due to bad sanitary conditions of the beach (inadequate toilets and shower facilities) and only few sports facilities offered, the final score for the facilities of Uranija is C.

The coastal scenery was evaluated as top quality, as it is situated in a relatively natural environment without major impact of the built environment, it has clear blue water, there is no evidence of sewage, and only few scattered items of litter were present on the beach. This resulted in the final score A for scenery.

Litter was assessed by applying the EA/NALG 2000 Protocol which considers six categories of litter: sewage related debris, gross litter, general litter, harmful litter, accumulations, oil and faeces. Almost all categories of litter were absent, or within the "top quality" limits, except for the harmful litter. Namely, a number of pieces of broken glass were found on the beach that resulted in the final score B for litter.

Taking all these parameters into consideration (C for safety, B for water quality, C for facilities, A for scenery and B for litter), the final rate for the Uranija beach is 3 stars.

Nikolina is the central beach of Baška Voda. It is the longest and widest beach (780 meters long with an average width of 18.8 meters⁶), and accordingly it attracts the majority of bathers. Like the others, it is also considered an urban beach. Also, Nikolina is the only beach of Baška Voda awarded the Blue Flag.

Nikolina is a natural, mainly gravel and pebble beach, with some sand. The beach hinterland is natural/wooded and urbanised (a road, restaurants and accommodation facilities). No traces of erosion have been evidenced. However, a detailed study is necessary to adequately tackle the issue of erosion along the Croatian coast.

The beach has a safe bathing environment, which includes low bathing environment slope, wave heights of less than 0.5 m for at least 80% of the bathing season, and absence of rip currents (outside storm conditions). It also has bathing/boating zoning markers and lifeguards. However, it should be stressed that on one particular occasion during the August 2007 evaluation (on August 5), under almost stormy weather conditions (very strong northern wind – bora) lifeguards

⁶ Detailed measurements will be necessary; see the previous footnote.

were absent, even though 750 bathers could be observed on the beach. This problem needs a more detailed elaboration in order to determine under whose responsibility these lifeguards, as the most important safety parameter, were absent even though the bathing conditions were far from being safe. The fixed safety equipment and beach information notices were also absent. It should also be stressed that Blue Flag beaches are obliged to regularly place the results of water quality monitoring to the information board. These monitoring results were absent from Nikolina. Looking at all the elements (and "ignoring" the fact that on the 5th of August the lifeguards were absent, as it could be considered as an exception), the final score for safety was B.

Just like for Uranija, the final result for the water quality (B), follows the overall result of the Ministry monitoring of 2006, which is *green quality* that corresponds to "good bathing quality sea" (MZOPUG, 2007).

In the facilities evaluation it was observed that four hotels "gravitate" to the beach ("Slavija", "Villa Bacchus", "Gađa" and "Horizont"), out of which "Villa Bacchus" and "Horizont" have four stars, "Gađa" three and "Slavija" two. There are also a number of private apartments, rooms, and B&Bs. Two public toilets could be found plus one for the disabled. Additionally, there are two toilets at the beach café and restaurant. Even though these toilets are relatively properly managed, considering the beach length and the number of people visiting the beach, their number is insufficient. This conclusion corresponds to the results of the 2007 beach users survey (Chapter 2.3.2). Nine showers were found on the beach, with an approximate distance of 50 meters between them. They are all managed relatively well. However, there were no fresh water taps. On the beach, one could find four restaurants and 2 cafès. There were numerous waste bins along the beach, all regularly emptied. Furthermore, there were bins for separated waste collection. Plastic sun-beds and umbrellas were available for rent. A number of changing booths could be found along the beach. There were only few water-based sports facilities, i.e. speed boating and pedaloës. However, outside the beach, one could find scuba diving, parasailing and jet-skiing. Still, these elements could not be considered as beach-based facilities and this influenced the final score. As a Blue Flag beach Nikolina should have wheel chair access to the beach, but this was not found. There is a parking lot nearby, but its capacity is limited to only (approximately) 300 cars. Mainly due to the restricted number of water-based sports elements offered, the final score for the facilities of Nikolina is C.

Even though the landscape of the beach is quite similar to the Uranija beach, the scenery of Nikolina resulted in the final score B. This is mainly due to the fact that the impact of built environment on the scenery is much stronger than on the previous beach.

Litter was assessed by applying the EA/NALG 2000 Protocol and, similar to the previous beach, several pieces of broken glass were found. General litter was considered as top quality. However, a number of cigarette butts were evidenced on the beach. Although the final score for litter was B, special attention has to be paid to solving the problem of cigarette butts on the beach.

Considering all of the above-elaborated parameters (B for safety, B for water quality, C for facilities, B for scenery and B for litter), the final rate for Nikolina is 3 stars.

The **Podluka-Ikovac** beach, also known as the Western beach, is 570 meters long with an average width of 14 meters⁷. However, it should be pointed out that in some places the beach is only few meters wide. It is a mainly gravel beach with some traces of sand. Its hinterland is 30% wooded and the rest is urbanised. Like the other beaches of Baška Voda, its main usage is for sunbathing and swimming. Following the same explanations as for the other beaches, it can be concluded that Ikovac is an urban beach as well.

The beach has a safe bathing environment, which includes low bathing environment slope, wave heights of less than 0.5 m for at least 80% of the bathing season and absence of rip currents (outside storm conditions). It has bathing/boating zoning markers, while there is absence of lifeguards, fixed safety equipment and beach information notices (such as presence of rip currents, records on water quality monitoring, etc.). This resulted in the final score C for safety.

⁷ Detailed measurements will be necessary; see the previous footnote.

Water quality in 2006 (as a result of the monitoring undertaken by the County Institute for Public Health together with the Ministry of Environmental Protection, Physical Planning and Construction) was awarded as *green quality* that corresponds to "good bathing quality sea" (MZOPUG, 2007). The final score for water quality within BARE is, therefore, B.

The facilities evaluation showed that there were two 3-star hotels associated with the beach ("Dubravka" and "Berulija"), as well as some B&B accommodation facilities offered to the visitors. On the beach, there was only one public toilet present, and it was out of order. However, the beach users can use the toilet at the restaurant in the bathing area. Out of the three present showers, only one was found working. One café is present on the beach itself, while above the beach there is a restaurant/snack bar. There are a number of waste bins along the beach, regularly emptied. On the beach there was a possibility of renting plastic sun-beds and umbrellas. Some changing booths were also present along the beach. Of the water-based sports options, one could rent jet skis, pedaloes/kayaks and para-sail. One small children-playground was found, but not of the highest quality. There were some parking places along the beach, but these could not be considered as fully adequate. Mainly due to the extremely poor sanitary conditions of the beach (inadequate toilets and shower facilities), the final score for the facilities of Podluka-Ikovac is C.

Unlike the other beaches, the scenery of Ikovac scored a C, mainly due to a strong impact of built environment on the beach scenery and very little natural vegetation cover present.

Litter was generally absent, and that resulted in the score A for litter.

Considering all of the above-elaborated parameters (C for safety, B for water quality, C for facilities, C for scenery and A for litter), the final rate for Podluka-Ikovac is 3 stars.

So, all of the three evaluated beaches achieved 3 stars. However, there is a great difference between them. And while for some only minor improvements are necessary for a rapid overall improvement, for others serious interventions would be necessary.

2.4.2 Beach Carrying Capacity

The carrying capacity of a tourist resort may be defined as: "The maximum number of people that may visit a tourist destination at the same time, without causing destruction of the physical, economic and socio-cultural environment and an unacceptable decrease in the quality of the visitors' satisfaction" (WTO, 1981; UNEP/MAP/PAP 1997, 2003). Therefore, the main parameters of the carrying capacity assessment are physical-ecological, socio-demographic and political-economic parameters (see Tourism Handbook, Chapter 5; UNEP/PAP, in press).

In case of beaches, determining the carrying capacity is one of the most important prerequisites for their planning and management. Beach carrying capacity has been studied for almost 40 years and it can be concluded that, just like in the case of tourism, a beach carrying capacity could not be determined strictly as the area of sand (gravel/pebble) available to beach users. Other factors need to be determined, such as beach accessibility, safety, car park availability, water quality conditions, users' expectations, etc. (da Silva *et al.*, 2007). It should also be stressed that the type of the beach should also be taken into consideration when calculating carrying capacity.

Physical carrying capacity (a number of individuals a beach can physically accommodate) at its simplest can be calculated based on the available beach space per bather. However, when calculating the available space the following factors should be taken into consideration: 1-3 meter wide coastal strip (at the water's edge) for lifeguards and free access to the water; 3 meter wide strip for the emergency services (at the main beach entrance points or alternatively, every 250 meters); and the car space available. Also, the type of beach should be considered, i.e. beaches in urban and resort areas, offering variety of facilities, would require higher surface area per individual (i.e. it would have lower carrying capacity) than the beaches in village and, in particular, rural and remote areas. Based on different aspects, different authors define different thresholds. For example, some (Pearce and Kirk, 1986; Yepes, 1998; in Da Silva *et al.*, 2005) consider the maximum tolerable carrying capacity (overcrowding) to be around 3-5 m² per person. Similarly, in Spain, a beach is considered to be saturated (from the recreational point of

view) when the space available to a beach user is less than 4 m² (Ariza *et al.*, 2007). Some other (Da Silva, 2007; Baud-Bovy and Lawson, 1998), depending on the beach type, define it between 7.5 m² to 30 m². For example, the Regional Landscape Plan of the Autonomous Region of Sardinia (2007) defines the maximum acceptable capacity, of a sandy beach, to be around 8-10 m².

Based on the above characteristics, the physical beach carrying capacity could be defined as shown in Table II.11.

Table II.11: Calculating physical carrying capacity

Beach type	Factors to be considered				Tolerable carrying capacity (m ²)
	Beach surface	Deducted safety strip	Deducted emergency strip	Car space available	
Resort	yes	3 m wide	3 m wide at the access points/or every 250 m	3.5 individuals per car ⁸	15-30
Urban	yes	1 m wide for beaches up to 15 m wide 2 m wide for beaches 15-30 m wide 3 m for beaches more than 30 m wide	3 m wide at the access points/or every 250 m	3.5 individuals per car	7.5-15
Village	yes	1 m wide for beaches up to 30 m wide 2 m for beaches more than 30 m wide ⁹	3 m wide at the main access point	3.5 individuals per car	5-7.5 ¹⁰
Rural	yes	1 m wide for beaches up to 30 m wide 2 m for beaches more than 30 m wide ¹¹	3 m wide at the main access point	3.5 individuals per car	3.5-5 ¹²
Remote	yes	1 m wide for beaches up to 30 m wide 2 m for beaches more than 30 m wide ¹³	3 m wide at the main access point	N/A ¹⁴	3.5-5

Ecological carrying capacity (a number of individuals a beach ecosystem can sustain in such a way that mortality rate of the species does not exceed the birth rate) is crucial for the beaches within protected areas, in particular if the beach ecosystem is the reason for establishing a protected area (e.g. beaches important for the breeding of the Loggerhead Sea Turtle – *Caretta caretta*). In other areas, at least the sea water quality should be taken into consideration. Monitored water quality should not be below "green" (according to the EU Bathing Water Directive or alike) for resort, urban and village beaches. Rural and remote beaches should be monitored using visual observation (up to: 6 sewage-related floating debris, 21 other floating debris, 6 traces of oil, and 21 sea bottom debris pieces; see Appendix II). Beach cleanness could also be considered when determining the ecological carrying capacity. One of the proposed tools is the one used within the BARE methodology where litter on the beach is assessed based on the EA/NALG Protocol.

Social carrying capacity (concentration of individuals above which beach users become uncomfortable – crowding perception) assessment is much more difficult to make than the previous two. Even though it seems easy to assume, i.e. *higher density – less quality*, it is much more difficult to apply it in the field, as people often behave differently from their survey answers (Da Silva, 2002). For example, people may state that the beach is overcrowded and not comfortable for recreation, according to their perception, but they may still continue to frequently

⁸ Official parking lot is expected.

⁹ Lifeguards are not expected on such beaches and, therefore, smaller access point is calculated.

¹⁰ Fewer recreational facilities are expected and, therefore, the threshold is lower than for the urban beaches.

¹¹ Lifeguards are not expected on such beaches and, therefore, smaller access point is calculated.

¹² Few or none facilities expected and, therefore, the threshold is the lowest.

¹³ Lifeguards are not expected on such beaches and, therefore, smaller access point is calculated.

¹⁴ Access to remote beaches is not possible directly by car.

visit the same beach. It should be stressed that within the social carrying capacity, people's crowding perception is not limited to physical congestion, but to the recreation quality. Therefore, it can be measured through the perception of adequate availability of toilets, showers, fresh water taps, safety on the beach (such as the number of lifeguards available), etc.

The concept of carrying capacity can be considered controversial. It is very attractive to managers and decision makers as it gives quantity data on (tourism) management quality. Still, giving a precise answer on the question "how many are too many" is not an easy task to do. Therefore, it cannot be expressed as a fixed and rigid value. It should oscillate between two tolerable thresholds, leaving the managers some flexibility and opportunity to adapt the values to the concrete and specific conditions of the site (da Silva, 2007).

Carrying capacity assessment should never be the only tool used for the evaluation of a beach management quality. Management of bathing areas can not rely on carrying capacity alone. It can be an important input and quality indicator, but only if used in combination with some other management evaluation techniques, such as the BARE.

2.4.2.1 Beach Carrying Capacity of Baška Voda

Carrying capacity assessment was applied to the beaches of Baška Voda following the concept previously described.

First, the *physical carrying capacity* was calculated taking into consideration three possible solutions:

- Nikolina, Podluka-Ikovac and Uranija are considered to be urban beaches (Table II.12);
- Nikolina, Podluka-Ikovac and Uranija are considered to be village beaches (Table II.13); and
- Maximum tolerable carrying capacity for Nikolina, Podluka-Ikovac and Uranija beaches. (Table II.14).

Based on the factors already described in Chapter 2.4.1.1, all the beaches of Baška Voda could be considered as urban. This particularly applies to the Nikolina beach which has the greatest number of facilities, attracts the greatest number of bathers, and is awarded with the Blue Flag (since 2005).

Uranija and Podluka-Ikovac could even be considered as village beaches, due to a much lower number of facilities offered and the fact that they are slightly removed from the town centre. However, it should be pointed out that such classification would not be the most appropriate one, and it would be methodologically wrong. Still, it could be useful for the short-term beach management.

Finally, based on the experts' analysis, the maximum tolerable carrying capacity could be defined. It is not recommended, but it could be used as an indication of the absolute maximum for a particular beach. If beach crowdedness is beyond that capacity figure, urgent measures should be taken.

Table II.12: Carrying capacity for urban beaches

	Nikolina	Uranija	Podluka-Ikovac	Total
Beach type	Urban	Urban	Urban	
Total beach surface (m²)	14,700 (780x18.84)	7,400 (620x11.9)	7,980 (570x14)	30,080
Safety strip (m²)	1,560 (780x2)	620 (620x1)	570 (570x1)	
Emergency strips (m²)¹⁵	160 (20x3 + 15x3 + 20x3)	165 (40x3 + 15x3)	48 (12x3 + 4x3)	
Car space available¹⁶	300	150	300	
Considered beach surface	12,980	6,615	7,362	26,957
Optimum carrying capacity	7.5-15	7.5-15	7.5-15	
Calculated carrying capacity	865-1,731 (1,050) ¹⁷	441-882 (525)	491-982 (1,050)	1,797-3,595 (2,625)

¹⁵ Approximate value.

¹⁶ Calculated based on consultations and estimations made by the tourist board and car parking responsible authorities.

Table II.13: Carrying capacity for village beaches

Beach name	Considered beach surface	Village beach carrying capacity	Calculated carrying capacity
Nikolina	12,980	5 – 7.5	1,731 – 2,595
Uranija	6,615	5 – 7.5	882 – 1,323
Podluka-Ikovac	7,362	5 – 7.5	982 – 1,472
Total			3,595 – 5,390

Table II.14: Maximum tolerable carrying capacity

Beach name	Considered beach surface	Maximum tolerable carrying capacity	Calculated carrying capacity
Nikolina	12,980	3.5 – 5	2,595 – 3,708
Uranija	6,615	3.5 – 5	1,323 – 1,890
Podluka-Ikovac	7,362	3.5 – 5	1,472 – 2,103
Total			5,390 – 7,701

The beaches were assessed on July 30 (Monday), August 3 (Friday), 5 (Sunday) and 7 (Tuesday), between 10 a.m. and 7 p.m., to determine the number of bathers present on the beach. Although the first half of August is considered as the peak of the season, it should be pointed out that the weather conditions were not favourable (especially on August 5) due to a very strong northern wind (bora) that was blowing in the whole Dalmatian region at that time. This resulted in a lower number of bathers than usual for that time of the year (Table II.15).

Table II.15: Approximate number of bathers in July and August on the beaches of Baška Voda

Beach name	Date of survey			
	Jul. 30	Aug. 3	Aug. 5	Aug. 7
Nikolina	2,322	2,403	1,404	2,133
Uranija		1,296	243	1,377
Podluka-Ikovac	1,323		756	2,025

Based on the above Table II.15, more than 2,000 people were visiting the Nikolina beach daily¹⁷. Compared to the optimum values for urban beaches, it can be concluded that the carrying capacity for the Nikolina beach was exceeded approximately 2-3 times. If Uranija is considered as an urban beach, its carrying capacity was exceeded approximately 2-4 times, while the carrying capacity for Podluka-Ikovac was exceeded up to 5 times.

Taking into consideration the number of tourists visiting Baška Voda and the currently available physical surface of the beaches and the parking places available, the following physical carrying capacities for the three beaches would be acceptable (if no additional measures are introduced to the beaches, such as additional facilities and/or economic instruments like entrance fee, etc.).

However, if new economic instruments are introduced, in order to improve the quality of the beaches, the recommended carrying capacity should be higher (Table II.17).

Table II.16: Acceptable physical beach carrying capacity in Baška Voda for a short-term, based on the present situation

Beach name	Acceptable beach carrying capacity	Calculated carrying capacity ¹⁹
Nikolina	7 m ² /person	1,854
Uranija	5 m ² / person	1,323
Podluka-Ikovac	5 m ² / person	1,526

¹⁷ Based on the parking area available.

¹⁸ Estimates made by Tourist board and Municipality of Baška Voda is that this number could be as much as 10.000

¹⁹ Includes average values of beach physical capacity and car parking capacity; Maximum value indicated is carrying capacity calculated solely of physical surface of the beach.

Table II.17: Recommended physical beach carrying capacity in Baška Voda, with improved management

Beach name	Recommended beach carrying capacity	Calculated carrying capacity ²⁰
Nikolina	15.0 m ² /person	865
Uranija	7.5 m ² / person	882
Podluka-Ikovac	7.5 m ² / person	982

Ecological carrying capacity of the three beaches was assessed only based on the 2006 overall water quality results. Namely, the beaches are not within a protected coastal area nor are they important breeding areas for some threatened species. Water quality monitoring has shown that the beaches have good bathing quality sea that is within the acceptable limits of the ecological carrying capacity. Additionally, litter analysis could be taken into consideration to assess the ecological carrying capacity. Based on the litter survey following the EA/NALG Protocol, all of the evaluated beaches had litter in class A or B (according to the EA/NALG Protocol), which is also within the ecological carrying capacity limits. However, a significant number of cigarette butts could be observed on the beaches that is in line with the comments gained from the 2007 survey respondents. This calls for an improvement of litter management in order not to exceed the ecological carrying capacity of the beaches.

On the other hand, if beach enlargement is to be considered, a detailed assessment should be made of impacts on the marine species (in particular due to possible *Posidonia oceanica* meadows present, up to a depth of 50 m), as well as some coastal (beach) ones important for the beach ecosystem. Should that be the case, a new ecological carrying capacity assessment should be made.

Bathers' perception, as part of the *social carrying capacity*, was assessed through the 2007 survey (see Chapter 2.3.2). A direct question on the crowdedness perception was not asked, but the respondents were asked about their general satisfaction with the beach environment and quality of facilities. Furthermore, in open-type questions they could point out all the elements they were not satisfied with. Generally, they indicated a lack and/or bad quality of facilities, but did not point out the overall crowdedness. Therefore, a new research with a specific question on beach crowdedness, as well as some aerial analysis of the number of people present on the beach, should be undertaken. Such research is to be done at different times within the season (to include the beginning, peak and the end; as well as all days of the week), and in different parts of the day.

On the Nikolina beach, 86% of bathers were satisfied (and very satisfied) with the environmental quality, and 78% were satisfied with the quality of the facilities. The main dissatisfaction was due to a lack of showers, toilets and recreational facilities. Still, 60% of the beach users were willing to pay for the improvement of the beach quality, i.e. mainly to improve the toilet facilities, natural environment and litter collection.

On Uranija, 76% of bathers were satisfied with the environmental and beach facilities quality. Between 15 and 20% were not satisfied due to bad showers, toilets, absence of lifeguards, etc. Still, 64% of the respondents were willing to pay for the improvement of the environmental quality of the beach, the number and quality of toilets, etc.

On Podluka-Ikovac, 94% of bathers were satisfied (and very satisfied) with the environmental quality, while 72% were satisfied and very satisfied with the quality of the beach facilities (19% were not satisfied or very unsatisfied; the rest were indifferent). The main reasons of dissatisfaction were due to the poor showers, toilet quality, etc. However, 64% of all bathers on Podluka-Ikovac were willing to pay for the improvement of the beach quality (mainly the toilet facilities).

Therefore, it can be concluded that, even though bathers largely claimed to be satisfied with the quality of the beaches, the majority of them (>60%) were willing to pay for additional improvement of the quality of the beaches. So, their perception of the quality and number of the necessary facilities was that they were inadequate for the number of beach users. Accordingly, it can be concluded that the social carrying capacity was exceeded.

²⁰ Includes average values of beach physical capacity and car parking capacity.

2.4.2.2 Beach Carrying Capacity – Conclusion

Based on the analysis, it can be concluded that all three beaches should be considered as **urban beaches**, owing to a great number of people gravitating to those beaches and their expectations regarding the environmental and facilities quality. Therefore, the overall carrying capacity should be assessed following the urban beach parameters. Still, we have to take into consideration the differences between these beaches. For example, Nikolina, as a blue flag beach, currently offers a higher standard than the other two, and thus requires greater space for beach users (cca 7 m²/person), while for Uranija and Podluka-Ikovac, a lower carrying capacity limit can be applied (5 m²/person) in the short term. This particularly applies if entrance fee, or similar economic instruments, are introduced for Nikolina.

Respecting such carrying capacity limits would require a significant improvement of beach management, as well as the introduction of some types of eco-taxes that beach users would be required to pay in order to ensure maintenance and/or additional improvement of the beach quality (see Chapter 3).

2.5 Conclusion

In the analysis of the bathing areas of Baška Voda three approaches were used: perception of beach users, expert analysis of the beaches, and calculation of the beach carrying capacity. Such a broad approach was used in order to get an integrated view of the current state of the Baška Voda beaches.

Generally, it can be said that all three beaches were rated as medium-quality beaches, i.e. three-star beaches (according to the expert analysis), but with different levels of improvement that needs to be done in order to reach a higher star classification (four or five star). Beach users, although mainly satisfied with the overall beach environmental quality and facilities offered, were willing to pay for their further improvement. That indicates that they were not as satisfied as might initially be concluded from their answers. Beach carrying capacity was largely exceeded on all the beaches, which is alarming for the beach managers. Namely, repeated over-utilisation of a beach might lead to its eventual degradation, degrading at the same time the very tourism that depends on it.

This information will be used as a starting point in the process of defining the Strategic Plan for Sustainable Beach Management, as part of the general tourism strategy of Baška Voda.



III. Strategic Plan for Sustainable Beach Management

3.1 Introduction

Based on the analysis of the bathing area resources of Baška Voda, a **Strategic Plan for Beach Management** (within the overall destination management) could be defined. It is based on the Strategic Planning Framework as defined in the Tourism Handbook (Chapter 5). Such Strategic Planning is described as a dynamic, flexible and adaptable process, characterised by:

- participation of a broad group of stakeholders whose needs, attitudes and values are reflected in the plan's philosophy, vision and contents;
- constant monitoring, re-evaluation and adaptation of the formulated plan; and
- interdependence among different components of the plan.

The major steps of the Strategic Planning Process are defined as follows:

1. Decision to begin the Strategic Planning Process
2. Consensus on the Vision Statement
3. Initial Analysis of the Destination
4. Tourism Carrying Capacity Assessment
5. Definition of a Baseline Scenario
6. Preparation of alternative scenarios for tourism development and definition of the Sustainable Scenario (SS)
7. Preparation and adoption of the Strategy for Sustainable Tourism
8. Formulation of the Strategic Action Plan
9. Implementation of the Strategic Action Plan
10. Monitoring
11. Review

This approach was applied in the process of defining the sustainable beach management plan for Baška Voda in order to demonstrate the application of Strategic Planning as defined in the Tourism Handbook. Namely, due to the limited time available for the application (July-November 2007), it was decided that the process would only focus on beach management development, rather than integral sustainable tourism development. However, the Sustainable Plan for beach management was defined as part of and fully in line with sustainable tourism development of Baška Voda. Even though the major steps for Strategic Planning were followed, the process was slightly modified in order to fully accommodate the situation in the field.

The process started with the decision to launch the Strategic Planning process and a definition of scope in collaboration with the commune of Baška Voda. In collaboration with the major stakeholders (i.e. representatives of the commune and the tourist board) the vision, goals and objectives of sustainable tourism and sustainable beach management were defined. An initial analysis of the bathing areas and overall tourism situation of Baška Voda was performed. Afterwards, a baseline scenario as well as alternative scenarios to achieve these objectives were defined and evaluated. It should be pointed out that the scenario analysis was not done based solely on carrying capacity indicators. Rather, a full range of indicators related to strategic goals and objectives was used. The sustainable beach management scenario was then selected, leading to the formulation of a strategy for sustainable beach management, including a strategic action plan. The most important component of the process was stakeholders' participation. The whole process was implemented in close collaboration with the key stakeholders (members of the local government, tourist board and tourist council), and together with them all the components of the strategy were reviewed, revised and redefined. In addition, a broad stakeholders' meeting was organised where all the components of the strategic plan were presented to the local community. Their suggestions were incorporated in the final version of the Strategic Action Plan.

The Strategic Plan for sustainable beach management of Baška Voda was developed within the process of formulating the Physical Plan for Baška Voda. The main objectives of the Physical Plan were respected and fully incorporated in the Strategic Plan. Also, some of the planned activities of the Strategic Plan could be incorporated in the Physical Plan. Namely, the Physical Plan outlines

some of the key problems of the current tourism practice. In particular, it emphasises the cases of illegal building, usurpation of public spaces, destruction of olive groves, etc.

With such analysis and strategic plan development, this document aims at offering a tool that would overcome gaps in development planning (especially tourism development) in the current practice in Baška Voda.

3.2 Sustainable Tourism Development Vision for Baška Voda

The vision of sustainable tourism development in Baška Voda, following the UNEP/UNWTO 12 aims of sustainable tourism, incorporates the main three pillars of sustainable development: environmental, economic and social ones. The vision is defined as follows:

Within an eight-year framework, develop Baška Voda as a recognisable tourism destination with preserved natural environment and attractive beaches, offering quality tourism product to visitors while ensuring wellbeing for its residents.

The main highlights of the Baška Voda tourism vision are:

- Baška Voda is a destination that sustains *environmental quality*;
- Baška Voda is a destination ensuring *visitors' fulfilment*;
- Baška Voda has developed a destination *brand*;
- Tourism in Baška Voda provides *economic viability*;
- Tourism in Baška Voda ensures *local prosperity*.

Within the general, sustainable tourism development vision, a more specific vision for sustainable beach management could be defined as well:

Within a three-year framework, develop management of bathing areas of Baška Voda that:

- *provides safe and enjoyable bathing environment for visitors and local residents, within the limits of carrying capacity;*
- *preserves the beach environment and clean sea by minimising pollution and generation of waste by tourism enterprises and visitors;*
- *ensures appropriate sanitary conditions in all the bathing areas.*

3.3 Objectives

3.3.1 Sustainable Tourism Development Objectives

The tourism vision of Baška Voda could be achieved by setting up and achieving a number of long-term objectives.

1. Quality of the natural landscape and environment is improved and maintained

- 1.1. Impact of new facilities on the environment minimised
- 1.2. Transport impact reduced
- 1.3. Quantity of litter (on the beaches) reduced
- 1.4. Discharge of untreated waste water reduced
- 1.5. Natural scenery on the beaches improved

2. Quality of tourism product (offer) of Baška Voda is improved

- 2.1. Tourism season extended
- 2.2. Quality of visitors' experience increased
- 2.3. High-quality tourists attracted

3. Tourism brand of Baška Voda is developed

- 3.1. Destination management concept defined and implemented

- 3.2. Synchronised marketing of Baška Voda as a unique (recognisable) destination developed
 3.3. Image of the accommodation, recreation and catering facilities of Baška Voda recognised

4. Increased portion of tourism-generated income remaining with the local population

- 4.1. The proportion of local products in the overall tourism offer maximised

5. Quality of life in Baška Voda is strengthened

6. Local cultural and historic heritage is respected

In the table that follows (III.1), objectives and indicators of sustainable development in Baška Voda are presented per themes.

Table III.1: Sustainable tourism development objectives and indicators

Themes	Objectives	Indicators
Environment	1. Quality of the natural landscape and environment is improved and maintained	<ul style="list-style-type: none"> Surface of green areas increased Public perception survey shows general satisfaction with the environmental conditions
	1.1 Impact of new facilities on the environment minimised	<ul style="list-style-type: none"> A number of new facilities respecting traditional building increased (compared to 2006/2007)
	1.2 Transport impact reduced	<ul style="list-style-type: none"> Number of cars in the city centre reduced (compared to 2006/2007)
	1.3 Quantity of litter (on the beaches) reduced	<ul style="list-style-type: none"> Increased number of recycle bins on the beaches Increased number of waste bins on the beaches Improved EA/NALG results
	1.4 Discharge of untreated waste water reduced	<ul style="list-style-type: none"> Improved results of sea water quality monitoring (blue quality)
	1.5 Natural scenery on the beaches improved	<ul style="list-style-type: none"> Number of trees on the beaches (and in the beach hinterland) increased
Economy	2. Quality of tourism product (offer) of Baška Voda is improved	<ul style="list-style-type: none"> At least two new tourist attractions (based on traditional elements) introduced
	2.1 Tourism season extended	<ul style="list-style-type: none"> Increased number of season days (more than 120)
	2.2 Quality of visitors' experience increased	<ul style="list-style-type: none"> Tourists' perception survey results on quality of experience showing continuous growth
	2.3 High-quality tourists attracted	<ul style="list-style-type: none"> Increased daily expenditure per tourist
	3. Tourism brand of Baška Voda is developed	<ul style="list-style-type: none"> Tourist surveys show that visitors recognise the specific image of Baška Voda
	3.1 Destination management concept defined and implemented	<ul style="list-style-type: none"> Tourism development plan created
	3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	<ul style="list-style-type: none"> Visible campaign for the destination developed
	3.3 Image of the accommodation, recreation and catering facilities of Baška Voda recognised	<ul style="list-style-type: none"> Results of perception survey among tourists shows that Baška Voda is recognised as a unique destination among other destinations of the Makarska Riviera
	4. Increased portion of tourism-generated income remaining with the local population	<ul style="list-style-type: none"> Increased local earnings from tourism
	4.1 The proportion of local products in the overall tourism offer maximised	<ul style="list-style-type: none"> Increased number of hotels offering local products Increased number of restaurants with local food Increased number of accommodation facilities treasuring traditional identity
Social	5. Quality of life in Baška Voda is strengthened	<ul style="list-style-type: none"> Increased local GDP
	6. Local cultural and historic heritage respected	<ul style="list-style-type: none"> Increased number of programmes offering local cultural aspects

3.3.2 Beach Management Objectives

The beach management vision could be achieved through more specific beach-related objectives. These short-term objectives should contribute to the achievement of the overall, sustainable tourism vision in the long term.

- 1. Safe and enjoyable bathing environment for visitors and local residents provided**
 - 1.1. Limits of the physical carrying capacity respected
- 2. Clean sea and bathing environment provided**
 - 2.1. Pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors minimised
 - 2.2. Limits of the ecological carrying capacity respected
- 3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas**
 - 3.1. Limits of the social carrying capacity respected

Beach management objectives and indicators are given in the Table III.2 below.

Table III.2: Beach management objectives and indicators

Objectives	Indicators
1. Safe and enjoyable bathing environment for visitors and local residents provided	<ul style="list-style-type: none"> ▪ Increased number of lifeguards ▪ Increased number and quality of recreational facilities offered
1.1 Limits of the physical carrying capacity respected	<ul style="list-style-type: none"> ▪ Number of bathers on Nikolina beach limited to 958-1,335 persons ▪ Number of bathers on Uranija beach limited to 704-925 persons ▪ Number of bathers on Podluka-Ikovac beach limited to 1,016-1,188 persons
2. Clean sea and bathing environment provided	<ul style="list-style-type: none"> ▪ Improved results of sea water quality monitoring (blue quality) ▪ Improved results of EA/NALG Protocol
2.1 Pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors minimised	<ul style="list-style-type: none"> ▪ Increased number of recycle bins on the beaches ▪ Increased number of waste bins on the beaches ▪ Reduced quantity of waste produced by beach-associated enterprises ²¹ ▪ Increased number of tourism enterprises (in the beach vicinity) carrying out environmentally-friendly policy
2.2 Limits of the ecological carrying capacity respected	<ul style="list-style-type: none"> ▪ Improved results of sea water quality monitoring (blue quality) ▪ Improved results of EA/NALG Protocol ▪ Beach users' perception surveys show general satisfaction with cleanness of beaches
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	<ul style="list-style-type: none"> ▪ Increased number of water-based sports facilities ▪ Increased number of facilities for children ▪ Increased number of toilets and showers working properly ▪ Increased number of changing booths ▪ Increased quantity of local products (such as traditional food) in beach-based bars/restaurants
3.1 Limits of the social carrying capacity respected	<ul style="list-style-type: none"> ▪ Beach users' perception surveys show that there is no over-crowdedness perception ▪ Beach users' perception surveys show general satisfaction with recreational facilities

²¹ Such as consumption of plastic glasses, etc.

3.4 Scenarios

Based on the sustainable tourism and beach management objectives, four different scenarios for the implementation of these objectives were developed. These scenarios are:

- i. Business as usual – i.e. the baseline scenario;
- ii. Restricted beach use;
- iii. Beach management favouring intensive, mass-tourism development; and
- iv. Moderate beach use.

Within each scenario, the sustainable tourism and beach management objectives were evaluated on the short and long term. The following symbols were used for the evaluation of the objectives:

- | | |
|-----|---|
| -- | objective highly unlikely to be achieved |
| - | objective unlikely to be achieved |
| -/+ | possibility of partly achievable objective; but more unlikely |
| 0 | neutral; no effect on the objective |
| +/- | possibility of partly achievable objective; but more likely |
| + | objective likely to be achieved |
| ++ | objective highly likely to be achieved |



Scenario 1: "Business as usual"

"Business as usual" option considers the current beach management policy as adequate and suitable for tourism development in Baška Voda. It is based on the concept that no specialised agency/institution is required to manage the bathing areas. The main objectives of this option are to sustain or increase the number of beach users to whom basic facilities would be provided, such as toilets, showers, changing booths, sun beds and umbrellas, as well as some basic water-based sports facilities. The number of toilets and showers would not be increased, only their yearly maintenance would be ensured. Special measures to limit the number of beach users would not be introduced. Therefore, it can be expected that the maximum tolerable carrying capacity limits would not be respected, resulting in an approximate number of beach users (on all the beaches) above 8,000 people, in the long term. Finally, beach management would be limited to the concept of Blue Flag, resulting in achieving the Blue Flag award for all three beaches of Baška Voda.

Scenario 1: Business as usual			
Beach management objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Provided safe and enjoyable bathing environment for visitors and local residents	+/-	-/+	Number of lifeguards (even though limited to 3-4 only on Nikolina beach) could be considered tolerable (but not adequate) in the short term. If new lifeguards' stands were installed on other beaches it could satisfy the needs of increasing numbers of bathers. With the current concept of the beaches, it is not rational to expect introduction of additional, quality recreational facilities. Even if they were installed, it would not ensure enjoyable bathing environment for the bathers.
1.1 Limits of physical carrying capacity respected	-/+	-	It can be expected that, in the short term (up to 3 years), the maximum tolerable carrying capacity (CC) limits (3.5-5m ² /bather) could be respected. However, this number seriously exceeds the recommended CC limit. In the long term, even the maximum tolerable limit would be exceeded.
2. Provided clean sea and bathing environment	+	+/-	Introduction of additional measures for water quality protection (such as stricter measures in the town port) and cleanness of the beach, in the short term could ensure improved results of sea water quality monitoring and EA/NALG Protocol. Growing impact of bathers is not likely to sustain such efforts in the long term.
2.1 Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors	-/+	-	Introduction of additional measures for cleaning the beaches (such as increased number of bins, etc.) would control the litter impact in the short term. No additional environmental measures would be expected from beach bars and beach associated hotels/apartments.
2.2 Limits of ecological carrying capacity respected	+	-/+	In the short term, the introduction of minimum additional measures could result in water quality improvement and reduction of beach litter (cigarette butts especially). But pressure of increased number of bathers could not fully sustain these efforts in the long term (especially if no beach management agency is in place). It can be expected that this would be reflected in beach users' perception surveys.
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	-/+	-	The current efforts for improving (maintaining) the beach sanitary and recreational facilities (especially on Uranijska and Ilovica beaches) are not enough to fully satisfy the needs of bathers. An increased number of bathers and crowdedness on the beaches would go toward additional reduction of bathers' satisfaction.
3.1 Limits of social carrying capacity respected	+/-	-	Current results of beach users' perception on crowdedness indicate that the social carrying capacity could already have been exceeded. In the long term, perception on over-crowdedness and dissatisfaction with recreational facilities could be expected.

Scenario 1: Business as usual			
Sustainable tourism objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Quality of natural landscape and environment is improved and maintained	+/-	-/+	Environmental conditions of bathing areas could be improved in the short term, which would contribute to the overall quality of the natural and landscape environment. In the long term, some "degradation" of the natural environment, due to the increased number of tourists (bathers), could be expected.
1.1 Minimising impact of new facilities on the environment	0	0	No direct impact of the new (tourism and other) facilities. Still, the general policy framework, of which it is part, does not encourage "environmental construction".
1.2 Transport impact reduced	+/-	-	Transport impact in the short term would be in line with the existing one, i.e. still relatively tolerable. In the long term, non-limiting policy for bathers is expected to only increase the number of cars, especially in the city centre.
1.3 Quantity of litter (on the beaches) reduced	-/+	-	Introduction of additional measures for cleaning the beaches (such as increased number of bins, etc.) would contribute to litter impact control in the short term. In the long term, it would be difficult to control.
1.4 Discharge of untreated waste water reduced	+	+/-	Introduction of additional measures for water quality protection (such as stricter measures in the town port) in the short term could ensure improved results of the sea water quality monitoring. Growing impact of bathers is not likely to sustain such efforts in the long term.
1.5 Natural scenery on the beaches improved	+/-	+/-	No additional measures for increasing natural shadow and the number of trees in the beach hinterland are expected.
2. Improved quality of tourism product (offer) in B. Voda	-	-	No improvement of tourism product quality is expected.
2.1 Extension of tourism season	0	0	Increased number of bathers would not contribute to extension of tourism season.
2.2 Quality of experience for visitors is increased	-	-	Exceeding the beach carrying capacity does not favour an increasing quality experience of tourists.
2.3 High-quality tourists attracted	-	-	Exceeding the beach carrying capacity does not favour attracting "high-quality" tourists.
3. Tourism brand of Baška Voda is developed	-	-	Absence of an agency that would "control" planning and implementation of beach management measures would, only indirectly, contribute to the lack of an appropriate branding of Baška Voda.
3.1 Defined and implemented destination management concept	-	-	Inadequate beach management concept would contribute to absence of overall destination management concept.
3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	-/+	-/+	Management of beaches by the local municipality (and absence of a specialised beach management agency) indirectly contributes to synchronised (centralised) destination marketing. However, the current trend in tourism management is likely to continue, i.e. no clear image of Baška Voda as a destination is developed.
3.3 Recognised image of the accommodation, recreation and catering facilities of Baška Voda	0	0	NA
4. Increased portion of tourism-generated income remaining with the local population	-	-	Absence of beach-related environmental instruments would not contribute to an increased proportion of visitors spending in general.
4.1 Maximising the proportion of local products in the overall tourism offer	-	-	No encouragement for catering facilities, on and near the beach, to introduce local products, in the short and long term is expected.
5. Improved quality of life in Baška Voda	+	+/-	An increased number of tourists in the short term may contribute to increase of the local GDP. Greater tourism impact is likely to be result of low-quality tourism, not bringing significant economic revenue.
6. Local cultural and historic heritage respected	0	0	NA

Scenario 2: Restricted beach use

Restricted beach use sees Baška Voda as a unique environmental destination with a highly sensitive beach environment. It aims at preserving the beaches and their controlled use for tourism purposes. Tourism/beach development in this option is limited to low-impact eco-facilities, improved cleanness of the beaches and a strict limitation of the number of vehicles in the beach vicinity. The number of bathers is limited (through the introduction of some economic instruments, such as entrance fee or booking system) to a maximum of 1,800–2,000 people (15 m²/person). This concept may create a specific market segment enabling more direct contacts among tourists and the local communities, thus disabling profit leakage. Furthermore, it can help create a unique image of Baška Voda as an environmentally-friendly destination. Such concept would require a specialised agency for beach management. All these measures might require considerable funds and a fairly long period to be properly implemented.

This concept may lead to a situation where the available number of tourist beds exceeds the number of the allowed places on the beach, which may result in tourists' dissatisfaction. Eventually, it would lead to a reduced number of tourists, which, even if they are of the highest quality, would result in dissatisfaction of the local population, as a great number of accommodation facilities would remain empty. Finally, this may lead to a limited overall economic revenue.

Scenario 2: Restricted beach use			
Beach management objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Provided safe and enjoyable bathing environment for visitors and local residents	+/-	+	In the short term, all the safety and recreational measures envisaged could not be fully applied. However, they could be expected in the long term ensuring safe and enjoyable environment for the bathers.
1.1 Limits of physical carrying capacity respected	+	++	Limits of the physical carrying capacity would be respected.
2. Provided clean sea and bathing environment	+	++	Introduction of additional measures for water quality protection (such as stricter measures in the town port) could be partially introduced in the short term, and fully applicable in the long term.
2.1 Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors	+	++	Introduction of additional measures for cleaning the beaches (such as increased number of bins, etc.) would control the litter impact in the short term. Environmental measures for beach bars and beach-associated hotels/apartments would be introduced in the long term.
2.2 Limits of ecological carrying capacity respected	+	++	Limits of the ecological carrying capacity would be respected.
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	+	+	Beach sanitary facilities would be increased and their quality improved. Local products would be introduced in the existing beach-based catering facilities. Still, recreational facilities would be limited.
3.1 Limits of social carrying capacity respected	+	++	Beach users' perception on crowdedness shows their general satisfaction.

Scenario 2: Restricted beach use			
Sustainable tourism objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Quality of natural landscape and environment is improved and maintained	+/-	+	Environmental conditions of the bathing areas would be improved that would, in the long term, contribute to the overall quality of the natural environment and landscape.
1.1 Minimising impact of new facilities on the environment	0	0	No direct impact of new (tourism and other) facilities. However, the general policy framework, of which it is part, encourages "environmental construction".
1.2 Transport impact reduced	+/-	++	Transport impact in the short term would be in line with the existing one, i.e. still relatively tolerable. In the long term, it is expected to reduce the number of cars, especially in the city centre.
1.3 Quantity of litter (on the beaches) reduced	+	++	Quantity of litter would be significantly reduced.
1.4 Discharge of untreated waste water reduced	+	++	Additional water quality protection measures (such as stricter measures in the town port) could be introduced in the short-term and would be fully applicable in the long term.
1.5 Natural scenery on the beaches improved	+	++	Measures for increasing natural shadow and the number of trees in the beach hinterland are fully implemented.
2. Improved quality of tourism product (offer) in B. Voda	+/-	+	Improvement of tourism product quality is expected, especially in the long term.
2.1 Extension of tourism season	0	0	Decreased number of bathers and introduction of environmental measures would not (directly) contribute to the extension of tourism season.
2.2 Quality of experience for visitors is increased	+/-	+/-	Quality of experience for bathers is expected to increase. However, this may not bring overall tourism satisfaction, especially due to the extremely limited number of available places for bathers.
2.3 High-quality tourists attracted	+/-	+	In the long run, such policy may lead to attraction of high-quality tourists. However, this needs to be part of the overall tourism policy, completely oriented toward such clientele.
3. Tourism brand of Baška Voda is developed	+	++	Environmental measures introduced would favour development of recognisable tourism brand of Baška Voda.
3.1 Defined and implemented destination management concept	+/-	-/+	Developed beach management concept may contribute to overall destination management concept. However, strict environmental rules, applied by the beach management agency, might not be favoured by all destination management decision makers.
3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	+/-	-/+	Synchronised destination marketing could be expected. However, discrepancy in the destination policy and beach management policy might occur. This can have negative effects on marketing.
3.3 Recognised image of the accommodation, recreation and catering facilities of Baška Voda	0	0	NA
4. Increased portion of tourism-generated income remaining with the local population	+	+/-	Beach-related environmental instruments would contribute to increased portion of tourism-generated income in short term. However, a limited number of bathers would reduce the overall tourists' spending in the long term.
4.1 Maximising the proportion of local products in the overall tourism offer	+	+	Encouragement for catering facilities, on and near the beach, to introduce local products, in the short and long terms is expected. That would contribute to increased overall proportion of local products in tourism offer.
5. Improved quality of life in Baška Voda	+/-	-	Limited environmental impact of tourists is expected to have a positive impact on the overall quality of life in Baška Voda. Especially if such policy attracts high-quality tourists. However, in the long term, this may result in an overall reduction of the number of tourists, and not increased local GDP.
6. Local cultural and historic heritage respected	0	0	NA

Scenario 3: Beach management favouring intensive – mass tourism development

This scenario is in line with mass tourism development policy. It favours an increased number of tourists, and, therefore, an increased number of beach users. In order to sustain such an increasing number of visitors, the surface of the bathing areas is artificially enlarged. This may produce some negative effects on the beach and marine ecological conditions. With such beach enlargement, the physical carrying capacity may be exceeded or within the maximum tolerable limits (approximately 3.5 m²/bather). Within such management scenario, the number of facilities on the beach would be increased. Also, with such tourism policy, it can be expected that all the beaches will be awarded the Blue Flag. Such intensified utilisation of the beach would lead to a greater impact on the beach environment (such as litter), especially in the long term.

A greater number of visitors in Baška Voda may actually result in a greater number of day-trippers. Nevertheless, economic benefits could be significant, particularly in the short term, although the real impact depends on the quality of tourists and the level of participation of locals in tourism and tourist-related business. While this option may be socially, economically and politically correct in the short run, it would be difficult to implement it in a controlled and environmentally-friendly way.

Scenario 3: Beach management favouring intensive – mass tourism development			
Beach management objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Provided safe and enjoyable bathing environment for visitors and local residents	-/+	+/-	In the short term, it is not likely to expect increased number of facilities and lifeguards to accommodate the increasing number of beach visitors. This can be implemented in the long run, but still bathing quality and safety might not be fully achieved due to a greater number of beach visitors.
1.1 Limits of physical carrying capacity respected	-	-/+	It can be expected that, in the short term (up to 3 years), the maximum tolerable carrying capacity (CC) limits (3.5 m ² /bather) are not fully respected. Due to beach enlargement, in the long term, this limit could be respected. However, even this number seriously exceeds the recommended CC limit.
2. Provided clean sea and bathing environment	-/+	-	Growing numbers of beach visitors would cause degradation of beach and marine environmental conditions.
2.1 Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors	-/+	-	Introduction of additional beach cleaning measures would control the litter impact in the short term. No environmental measures would be expected from beach cafés and beach-associated hotels/apartments.
2.2 Limits of ecological carrying capacity respected	-/+	-	Ecological carrying capacity could be controlled in the short term. Beach enlargement might cause ecological degradation in the long term.
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	+/-	-/+	A greater number of recreational facilities would be placed on the beaches. However, sanitary conditions for a growing number of bathers might not be adequate, especially in the long run. Also, a growing number of bathers and crowdedness on the beaches would go towards additional reduction of bathers' satisfaction.
3.1 Limits of social carrying capacity respected	-/+	-	In the long term, perception on over-crowdedness and dissatisfaction with recreational facilities could be expected.

Scenario 3: Beach management favouring intensive – mass tourism development			
Sustainable tourism objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Quality of natural landscape and environment is improved and maintained	-/+	-/+	No significant improvements of the environmental conditions of the bathing areas are expected.
1.1 Minimising impact of new facilities on the environment	0	0	No direct impact of the new facilities. However, general policy framework, of which it is part, does not encourage "environmental construction".
1.2 Transport impact reduced	-/+	-	Especially in the long term, an increased number of cars is expected, especially in the city centre.
1.3 Quantity of litter (on the beaches) reduced	-/+	-	Introduction of additional beach cleaning measures could contribute to a certain litter impact control in the short term. In the long term, it would be difficult to control.
1.4 Discharge of untreated waste water reduced	+/-	-/+	Some measures to control water quality in the short term could be expected. Growing impact of bathers is not likely to sustain such efforts in the long term.
1.5 Natural scenery on the beaches improved	+/-	+/-	No additional measures for increasing the natural shadow and the number of trees in the beach hinterland are expected.
2. Improved quality of tourism product (offer) in B. Voda	-	-	No improvement of tourism product quality is expected.
2.1 Extension of tourism season	0	0	Increased numbers of bathers would not contribute to extension of tourism season.
2.2 Quality of experience for visitors is increased	-	-	Exceeding the beach carrying capacity does not favour increasing quality experience for tourists (it will create the "too crowded" effect with significant reduction of tourist satisfaction).
2.3 High-quality tourists attracted	-	-	Exceeding the beach carrying capacity does not favour attracting "high-quality" tourists (just the opposite).
3. Tourism brand of Baška Voda is developed	-	-	Mass tourism policy does not favour development of unique tourism brand for Baška Voda.
3.1 Defined and implemented destination management concept	-	-	Mass tourism policy and beach management concept developed within, are not in line with the creation of unique destination management concept.
3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	+	+/-	Synchronised destination marketing could be expected, as beach management policy is in line with general mass tourism policy. In the long term, some resistance to such policy might be expected.
3.3 Recognised image of the accommodation, recreation and catering facilities of Baška Voda	0	0	NA
4. Increased portion of tourism-generated income remaining with the local population	-	-	Absence of beach-related environmental instruments would not contribute to increased proportion of visitors spending in general.
4.1 Maximising the proportion of local products in the overall tourism offer	-	-	Encouragement for catering companies, on and near the beach, to introduce local products, in the short or the long-term, is not expected.
5. Improved quality of life in Baška Voda	+	-/+	Increased number of tourists in the short term may contribute to increase of the local GDP. Greater tourism impact is likely to be result of low-quality tourism, not bringing significant economic revenue in the long run (increased number of tourists will create side effects, like increasing of circulation and so on).
6. Local cultural and historic heritage respected	0	0	NA

Scenario 4: Moderate beach use

The moderate beach use concept respects the recommended physical carrying capacity limits. i.e. 7.5-15 m²/bather, which limits the number of bathers to approximately 3,000 at any given time. In order to achieve such a standard careful planning would be necessary, as well as the introduction of appropriate environmental instruments, in particular taking into consideration the existing number of beds. Therefore, the establishment of a beach management institution would be required.

This management concept would be focused on the improvement of beach-based facilities, in particular the sanitary ones. Also, it would encourage the introduction of environmentally-friendly principles in the tourist facilities in the beach vicinity. Introduction of economic instruments aiming at the improvement of environmental conditions might not be favoured in the short term, but in the long term they may lead to environmental protection while ensuring economic and social benefit.

Scenario 4: Moderate beach use			
Beach management objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Provided safe and enjoyable bathing environment for visitors and local residents	+	++	Reduction of the number of bathers, followed by improvement of facilities offered and increased number of lifeguards would, in the long term, lead to enjoyable and safe bathing environment for bathers.
1.1 Limits of physical carrying capacity respected	+	++	Limits of the physical carrying capacity would be respected.
2. Provided clean sea and bathing environment	+	++	Additional water quality protection measures could be introduced in the short term and become fully applicable in the long term.
2.1 Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors	+	++	Beach cleanness would be one of the priorities. Environmental measures for beach cafés and beach-associated hotels/apartments would be introduced in the long term.
2.2 Limits of ecological carrying capacity respected	+	++	Limits of the ecological carrying capacity would be respected.
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	+	++	Beach sanitary and recreational facilities would be increased and their quality improved. Local products would be introduced in the existing beach-based catering facilities.
3.1 Limits of social carrying capacity respected	+	++	Beach users' perception of crowdedness shows their general satisfaction.

Scenario 4: Moderate beach use			
Sustainable tourism objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Quality of natural landscape and environment is improved and maintained	+/-	+	Environmental conditions of the bathing areas would be improved, which would, in the long term, contribute to the overall quality of the natural and landscape environment.
1.1 Minimising impact of new facilities on the environment	0	0	No direct impact of the new facilities.
1.2 Transport impact reduced	+/-	+	Transport impact in the short term would be in line with the existing one, i.e. still relatively tolerable. In the long term, it can be expected that new parking lots will be provided, outside the city centre (distant from the shore).
1.3 Quantity of litter (on the beaches) reduced	+	++	Quantity of litter would be significantly reduced.
1.4 Discharge of untreated waste water reduced	+	++	Additional water quality protection measures (such as stricter measures in the town port) could be introduced in the short term and become fully applicable in the long term.
1.5 Natural scenery on the beaches improved	+	++	Measures for increasing the natural shadow and the number of trees in the beach hinterland are fully implemented.
2. Improved quality of tourism product (offer) in B. Voda	+/-	+	Improvement of tourism product quality is expected, especially in the long term.
2.1 Extension of tourism season	0	0	Any beach management policy does not (directly) contribute to the extension of the tourism season.
2.2 Quality of experience for visitors is increased	+	+	Quality of experience for bathers, and, therefore, tourists, is expected.
2.3 High-quality tourists attracted	+/-	+	In the long term, such a policy may contribute to the attraction of high-quality tourists, as day-trippers might not be interested in paying for the beach use.
3. Tourism brand of Baška Voda is developed	+	++	The introduced sustainable beach management measures would favour development of a recognisable tourism brand of Baška Voda.
3.1 Defined and implemented destination management concept	+/-	+	Beach management policy could help create a unique destination management concept.
3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	+/-	+	Collaboration of the beach management agency and other tourism development decision makers might be expected.
3.3 Recognised image of the accommodation, recreation and catering facilities of Baška Voda	0	0	NA
4. Increased portion of tourism-generated income remaining with the local population	-/+	+/-	Introduction of beach-related environmental instruments would contribute to increased proportion of visitors spending.
4.1 Maximising the proportion of local products in the overall tourism offer	+	+	Encouragement for catering facilities, on and near the beach, to introduce local products, in the short and long term, is expected. That would contribute to overall proportion of local products in tourism offer.
5. Improved quality of life in Baška Voda	+/-	+	Limiting the environmental impact of tourists is expected to have a positive impact on the overall quality of life in Baška Voda. Furthermore, it can help gain economic benefits from day-trippers as well.
6. Local cultural and historic heritage respected	0	0	NA

3.4.1 Sustainable Beach Management Scenario

Scenario 4 – Moderate beach use scenario is the one that corresponds best with the beach management objectives and the sustainable tourism development objectives. This scenario ensures a better quality of the environment and provides adequate recreational and safety infrastructure for the visitors. This option also aims at providing clean sea and bathing environment, all within the physical, social and ecologic beach carrying capacity. In order to adequately achieve these objectives, the establishment of a specialised agency for beach management in Baška Voda would be highly recommended. Such an agency could also facilitate the introduction of economic instruments for preserving beach environment while ensuring adequate recreational and sanitary facilities. It could also greatly contribute to the overall destination management concept, as well as creation of a unique and recognisable brand of Baška Voda, benefiting thus the marketing image of the area

Short-term economic impacts are good owing to the critical mass of the existing tourism supply, although the overall initial investment may be high. In the long term, economic impacts are supposed to be sustainable as a result of the created marketing image of the area and the maintained environmental quality attracting high-quality tourist clientele.

The restricted beach management scenario also ensures environmental protection, but it is very difficult for this option to bring improved quality of life. Furthermore, this option is not likely to get a local consensus given the high expectations regarding the tourism development. In the "business as usual" scenario, effective measures to resist unsustainable tourism pressures for coastal (beach) environment are required. The mass tourism scenario fails on a longer-run sustainability test, both in terms of environmental impacts and the social and economic benefit.

3.4.2 Modified "Moderate Beach Use Scenario"

As a result of the first joint meeting of all stakeholders in the decision-making process relevant to tourism in Baška Voda (including members of the Tourist Board and the municipal council) with representatives of the Priority Actions Programme Regional Activity Centre (PAP/RAC), the fourth scenario was modified in order to harmonise tourism growth with the needs of both tourists and the local population. Accordingly, the action plan will be harmonised with the adapted scenario of moderate beach use management.

Although the counting of the number of beach users in the period July 30 – August 7, 2007 showed that there had been, on average, between 2,400 and 5,500 users on all the beaches, from the discussions with the representatives of the Municipality and the Tourist Board it resulted that those numbers could exceed 10,000. Taking also in consideration the fact that Baška Voda has 8,000 tourist beds (registered), that are fully booked during the tourist season, and that a considerable number of day visitors come to the beaches from the neighbouring areas, it can be concluded with certainty that the real number of beach users exceeds by far the observed maximum of 5,500. The current physical capacity of the beaches can not provide adequate comfort for the total number of users gravitating to these beaches. Therefore, it has been concluded that, although the recommended (optimum) carrying capacity of the Baška Voda beaches would be between 7.5 and 15 m², it would be almost impossible to achieve since that would mean either a dramatic expansion of the beach area or a drastic reduction of the number of beach users, and neither is sustainable on the long run for the tourism development of Baška Voda.

It was, therefore, recommended that the concept of *moderate use of beaches* be modified so as to increase the current beach surface, but only as much as needed to secure a minimum carrying capacity of 5 m² per user (presuming a number of 10,000 visitors at a given time)²². This scenario would also secure improvement of beach facilities, and especially the sanitary conditions. Introduction would be stimulated of environmentally-friendly principles to tourist facilities near the beaches, as well as of economic instruments aimed at improving the beach environment.

The analysis of the modified Scenario 4 can be summarised as follows:

²² Beach expansion details will be defined on the basis of a feasibility study and environmental impact assessment

Scenario 4.1: Modified, moderate beach use			
Beach management objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Provided safe and enjoyable bathing environment for visitors and local residents	+	++	Reduction of the number of users, along with improvement of offered services and increased number of life savers could, in the long run, lead to an environment that is safe and pleasant for the users.
1.1 Limits of physical carrying capacity respected	+/-	+	The minimum physical carrying capacity (5 m ²) would be respected which, although far from optimum, can be considered acceptable given the current tourism development level.
2. Provided clean sea and bathing environment	+	++	Additional sea quality protection measures could be introduced in a short term, which could then be implemented to the full in a long term.
2.1 Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors	+	++	Beach cleanliness would be a priority. On a long term, environmental protection measures would be introduced for catering and accommodation facilities along the beach.
2.2 Limits of ecological carrying capacity respected	+/-	+/-	Although beach expansion can cause considerable negative pressure on the environment, preparation of environmental impact assessment would secure that the beach surface expansion project respects environmental limitations as much as possible. If the assessment results are negative, the expansion project will have to be modified or rejected.
3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas	+	++	The number and quality of the sanitary and recreational facilities on the beach would increase.
3.1 Limits of social carrying capacity respected	+	+	Beach users are mostly satisfied with the number of visitors of the beach (no over crowding).



Scenario 4.1: Modified, moderate beach use			
Sustainable tourism objectives	Evaluation		Comments/explanations
	Short term	Long term	
1. Quality of natural landscape and environment is improved and maintained	+/-	+/-	The state of the environment of the beach areas would not be significantly improved.
1.1 Minimising impact of new facilities on the environment	0	0	No direct impacts of the new facilities.
1.2 Transport impact reduced	+/-	+	On a short term, traffic impact would remain unchanged, i.e. it would be comparatively bearable. On a long term, new parking lots can be expected, outside the town centre (far from the coast).
1.3 Quantity of litter (on the beaches) reduced	+	++	Waste quantities would be significantly reduced.
1.4 Discharge of untreated waste water reduced	+	++	Additional sea quality protection measures (stricter measures in the town harbour; secondary waste water treatment) can be introduced in part very soon, but would be fully applied on a long term.
1.5 Natural scenery on the beaches improved	+	++	Measures aimed at increasing the natural shade and the number of trees on the beaches have been fully implemented.
2. Improved quality of tourism product (offer) in B. Voda	+/-	+	Seen on a long term, an improvement is expected of the tourist product quality of Baška Voda.
2.1 Extension of tourism season	0	0	None of the beach management policies contributes (directly) to prolonging of the tourist season.
2.2 Quality of experience for visitors is increased	+	+	Tourists are expected to have a good quality experience of their stay.
2.3 High-quality tourists attracted	+/-	+	Introduction of a charge for the use of beach services (entrance fee and alike) can, in the long run, contribute to attracting a higher quality tourism since it can be expected that day visitors, reluctant to pay for the use of the beaches, will be discouraged.
3. Tourism brand of Baška Voda is developed	+	+	Introduction of sustainable beach management measures would contribute to the development of the tourist brand of Baška Voda. However, mere complying with the maximum carrying capacity would have no affect on the uniqueness of the brand or its capacity to be recognised (additional improvement is necessary of all other elements of the tourist product).
3.1 Defined and implemented destination management concept	+/-	+	Beach management policy could help define a management concept for the unique tourist destination.
3.2 Synchronised marketing of Baška Voda as a unique (recognisable) destination developed	+/-	+	Co-operation can be expected with the beach management agency and other decision makers in the tourism development process.
3.3 Recognised image of the accommodation, recreation and catering facilities of Baška Voda	0	0	-
4. Increased portion of tourism-generated income remaining with the local population	+	+	Introduction of environmental instruments relevant to beach conservation can lead to increased portion of tourist expenditure.
4.1 Maximising the proportion of local products in the overall tourism offer	+	+	On both short and long terms, stimulation is expected for the introduction of local specialties in the gastronomic offer on the beaches and in their vicinity. That would contribute to increasing the local produce portion in the tourist offer.
5. Improved quality of life in Baška Voda	+/-	+	Limiting environmental impact of tourism could have positive effects on the quality of life in Baška Voda. Also, earnings can be expected from day visitors.
6. Local cultural and historic heritage respected	0	0	NA

3.5 Strategy for Sustainable Beach Management

The Strategy for Sustainable Beach Management of the Destination clearly articulates short-term beach management objectives, within the long-term sustainable tourism objectives. It is consistent with the general vision and objectives of other policy areas, as indicated in the Physical Plan of Baška Voda.

As defined in the Chapter 3.2 (in particular 3.2.2), the main objectives of the sustainable beach management in Baška Voda are:

- 1. Safe and enjoyable bathing environment for visitors and local residents provided**
 - 1.1. Limits of the physical carrying capacity respected
- 2. Clean sea and bathing environment provided**
 - 2.1. Minimising pollution and generation of waste by tourism enterprises (on the beach and in the beach vicinity) and visitors
 - 2.2. Limits of the ecological carrying capacity respected
- 3. Adequate recreational, sanitary and catering facilities provided in all the bathing areas**
 - 3.1. Limits of the social carrying capacity respected

In order to achieve these objectives, a Strategic Action Plan was defined.

3.5.1 Strategic Action Plan

The selected scenario (modified Moderate Beach Management) can be carried out by careful planning and defining an appropriate action plan. The critical components of such an action plan are the establishment of a specialised beach management agency and the selection of appropriate economic instruments to control the number of bathers in Baška Voda. Based on the use of different instruments, a variety of action plan scenarios were developed and discussed with stakeholders. Four economic instruments' implementation options, are attached to this document as Appendix IV.

The Action Plan for the Development of Sustainable Beach Management for Baška Voda has been defined for a period of three years. It is expected to lead to the achievement of the set goals of sustainable beach management, as well as contribute to the achievement of long-term objectives of sustainable tourism in Baška Voda.

The most important element of the Action Plan would be the establishment of a beach management agency within the next two years. The agency would be responsible for defining and implementing the beach management strategy. It would maintain all the facilities in the bathing area and implement appropriate economic schemes for the beach use. In the beginning, the agency would have 2 people employed full-time throughout the whole year, with the perspective of employing up to 5 people. During the season, it could have more temporary employees working on beach maintenance. Initial funds for setting up the agency would come from the local municipality, possibly through some (inter)national funding schemes, such as LIFE. It is recommended that the agency be a public company, "owned" by the municipality. However, the agency's perspective should be to become self-sustained in the long run.

The basic concept of the final, agreed action plan can be summarised as follows:

- i. Establishment of an agency to manage beach resources;
- ii. Expansion of the existing beach capacities in order to harmonise the growing number of tourists in Baška Voda and the needs of the beach users with safe and pleasant stay on the beaches;
- iii. "Limiting" (controlling) the number of beach users;
- iv. Improvement of sanitary and recreational facilities on the beaches.

Table III.3: Action Plan summary

Objective	Activity	Indicators	Cost (Euro)	Source of financing
Establishment of sustainable beach management in Baška Voda	Establishment of sustainable beach management agency	<ul style="list-style-type: none"> By early 2010, agency registered (with Baška Voda Municipality) 	50,000 (1 year; includes the cost of premises and two employees)	Baška Voda Municipality International tenders
	Improvement of safety elements of the beaches	<ul style="list-style-type: none"> By summer 2011, provision of fixed safety elements on the Uranija and Podluka-Ikovac beaches By summer 2012, 2 additional lifeguards (for a total of 5) on the Nikolina beach 	20,000 (education and lifesavers costs; installation of fixed equipment)	Baška Voda Municipality Croatian tenders Split-Dalmatia County and Ministry of Environment International tenders
	Improvement of the existing and installation of new sanitary facilities	<ul style="list-style-type: none"> By summer 2011, all existing toilettes in function By summer 2011, all existing showers in function By summer 2012, at least one toilette installed on the Uranija and Podluka-Ikovac beaches, and one on the Nikolina beach By summer 2012, additional showers installed on the Uranija and Podluka-Ikovac beaches (on average one every 100-150 m) 	30,000	Baška Voda Municipality International tenders Agency
Safe and pleasant use of beaches for visitors and local population enabled	Preparation of the study on optimum increase of beach surface area	<ul style="list-style-type: none"> By mid 2010, study prepared of optimum beach increase 	20,000	Baška Voda Municipality Baška Voda Tourist Bureau
	Minimum increase of the surface area of the existing beaches	<ul style="list-style-type: none"> By the end of 2010, beach surface area increased 	300,000 (detailed cost breakdown on the basis of the study)	Baška Voda Municipality Split-Dalmatia County Baška Voda Tourist Bureau
	Introduction of a charging system for the use of beach facilities and resources	<ul style="list-style-type: none"> By summer 2010, entry fee system organised for the Nikolina beach By summer 2011, charging system organised for additional services (toilets, showers, deck chairs, umbrellas, etc.) on the Uranija and Podluka-Ikovac beaches 	70,000 (includes infrastructure interventions and computerised beach entry control)	Baška Voda Municipality Agency International tenders
Respecting the limits of the physical carrying capacity	Construction of additional parking areas outside the town centre and increased parking fees	<ul style="list-style-type: none"> By end 2011, one parking lot constructed with a capacity of up to 300 cars By end 2012, system introduced of charging parking fees increased by 50% 	400,000	Baška Voda Municipality
	Introduction of "eco-tax" charging system for day visitors	<ul style="list-style-type: none"> By summer 2012, "eco-tax" charging system in force for day visitors arriving by car 	10,000	Baška Voda Municipality
	Information and strengthening of public awareness	<ul style="list-style-type: none"> Number of published brochures, posters and other promotional materials on the introduction of beach management measures Number of published interviews and articles on the introduction of beach management measures in Baška Voda 	20,000	Agency Baška Voda Tourist Bureau

Objective	Activity	Indicators	Cost (Euro)	Source of financing
Clean sea and environment	Increased personnel in charge of beach cleaning	<ul style="list-style-type: none"> By summer 2010, seasonal engagement of at least 4 people to clean the beaches By end 2010, improved results of beach cleanliness monitoring (EA/NALG Protocol) 	15,000	Baška Voda Municipality Agency International tenders
	Analysis of causes of reduced sea water quality for bathing	<ul style="list-style-type: none"> By end 2011, identification of causes on increased coliform contents in the sea 	10,000	Baška Voda Municipality Baška Voda Tourist Bureau International tenders
	Reduction of causes of reduced sea water quality for bathing	<ul style="list-style-type: none"> By end 2011, monitoring results show high-quality sea water on at least one beach 	2,500	Baška Voda Tourist Bureau (later Agency)
	Introduction of measures to reduce litter on the beaches	<ul style="list-style-type: none"> By summer 2010, increased number of waste bins on all beaches By summer 2010, provision of cigarette butt cans on all beaches By summer 2010, provision of thrash cans for garbage separation on the beaches (except Nikolina) 	5,000	Baška Voda Municipality Agency
Pollution and waste production by tourist facilities (on and around the beach) and tourists reduced to a minimum	Preparation of a feasibility study for the introduction of ecological toilettes on the beaches	<ul style="list-style-type: none"> By end 2011, feasibility study completed 	5,000	Agency International-Croatian tenders
	Proposal for introduction of ecological standards for tourist facilities in the vicinity of beaches	<ul style="list-style-type: none"> By end 2012, MoU signed with at least one hotel on the introduction of ecological standards in their operation 	1,000	Agency International-Croatian tenders Split-Dalmatia County
	Preparation of environmental impact assessment study for beach expansion	<ul style="list-style-type: none"> By summer 2010, environmental impact assessment study completed 	15,000	Baška Voda Municipality Baška Voda Tourist Bureau
	Opinion poll among beach users on beach cleanliness	<ul style="list-style-type: none"> Yearly opinion polls among beach users show positive trend 	2,000	Baška Voda Tourist Bureau Agency
All beaches equipped with appropriate recreation and catering facilities	Introduction of new facilities on all beaches	<ul style="list-style-type: none"> By summer 2010, increased number of sports facilities (outside the designated bathing area) By summer 2010, increased number of changing booths By summer 2010, increased number of children entertainment facilities 	100,000	Baška Voda Municipality Agency International tenders
	Opinion poll among beach users on their satisfaction with beach facilities and overcrowding	<ul style="list-style-type: none"> Yearly opinion polls among beach users show positive trend 	-	Baška Voda Tourist Bureau Agency

i. Establishment of agency for sustainable beach management

One of the priority activities aimed at the achievement of sustainable beach management in Baška Voda is the establishment of a specialised agency. The agency should be established by the beginning of 2010 with the principal objective of defining and implementing beach management strategies. The agency would be responsible for the management of all beach resources of Baška Voda (eventually to cover all the beaches of the municipality). It should be established as a public enterprise at the Baška Voda Municipality. The cost of its establishment, as well operational costs for the first two years would be covered primarily from the Municipality budget with the possibility of additional financing through national and international tenders. The long-term strategy of the agency would be the achievement of self-financing, i.e. the beach maintenance costs would be covered by the fees/charges for the use of beach facilities. Apart from that, the agency can benefit from various (national and international) funds as a result of well-prepared programmes. It is, therefore, of utmost importance that the agency employ high-educated experts who will be able to prepare and implement management programmes good enough to apply for adequate additional financing.

In the first two years, the agency would employ two people throughout the year, while in the summer season additional personnel would be engaged to clean the beaches, maintain beach facilities and order on the beaches, as well as control the entry to the beaches and charge entrance fees. The long-term strategy of the agency envisages permanent employment of 5 persons.

ii. Improvement of safety features of the beaches

In summer 2007, the Nikolina beach had a total of 3 lifeguards. The Uranija and Podluka beaches had none. In order to improve the safety on the beaches catering for up to 10,000 users it is necessary to install additional safety equipment (apart from the existing lifesavers and clear seaward marking of the bathing area). By summer 2011, fixed safety elements should be installed on the Uranija and Podluka beaches (in the form of fixed life buoys), one every 250 m. It is of utmost importance that these be well fixed, near the water line and, most importantly, easily accessible. The access to this safety equipment must be completely free in order to enable its unobstructed use in case of necessity. By summer 2012 (especially in the case of beach expansion), additional two (at least) lifeguards should be provided for the Nikolina beach. Of course, introduction of lifeguard service for other beaches is not excluded.

iii. Improvement of the existing and provision of additional sanitary facilities

Research of the quality of the Baška Voda beach facilities performed in August 2007 showed that the Ikovac beach had only one toilet, which was also out of order, and that the Uranija beach had two, of which one was out of order and the other was of an exceptionally low standard. Therefore, one of the priorities of the newly established agency will be to bring all the existing toilets to full function by summer season 2011, and to provide for their adequate maintenance. On the Nikolina beach there are three public toilets, plus two within the existing catering facilities. Although the standard of those is satisfactory, it is recommended to provide additional toilets on the Nikolina beach, especially in the case of beach area expansion. It is also necessary to provide at least one toilet each for the Uranija and Ikovac beaches (especially in the case of beach area expansion) by summer 2012.

The number of functioning showers on the Ikovac and Uranija beaches is completely unsatisfactory, so repairing of the existing and instalment of additional showers (one every 100-150 m on average) is envisaged for the Uranija and Podluka-Ikovac beaches. In order not to threaten the seawater quality for bathing, the use of shampoos and other cosmetic products should be forbidden. Since the increased number of showers will inevitably lead to increased water consumption, it is recommended to introduce a charge for using the showers, especially if there is no beach entry fee (see activity *vi*).

iv. Preparation of a study on optimum increase of beach surface area

The Baška Voda Municipality and the Tourist Bureau of Baška Voda financed the preparation of studies assessing the construction of additional and improvement of the existing groins, primarily on the "Southern beach" (now *Nikolina*). Such interventions would improve the existing situation with inadequately built *groins*, and a resulting "natural" beach expansion is possible. However, comprehensive studies on the subject have not been elaborated.

It is, therefore, recommended to prepare an integrated study to assess the possibilities for beach expansion (such as repairing the existing *groins*, construction of new ones, beach nourishment, and pebble dredging from greater depths), and to propose a solution that would be least harmful for the environment at an acceptable price.

v. Minimum increase of the surface area of the existing beaches

On the basis of the existing tourist capacities it can be assumed that the Baška Voda beaches serve approximately 8,500 users (although some statistics indicate over 10,000 visitors in certain periods). Accordingly, it can easily be concluded that the current beach surface is insufficient to receive all the visitors. It is, therefore, possible to expand the beaches (or just one), but only:

- on the basis of a study of optimum increase of the beach surface area;
- if the complete project documentation is satisfied, primarily of the environmental impact assessment study (see activity xvi); and
- according to the current legislation (Law on Environmental Protection, Law on Construction and Land-use Management, Law on Maritime Public Domain and Harbours, Regulation on types of habitat categories²³).

The recommended physical carrying capacity for urban beaches is 7.5-15 m². With regard to the current beach capacities and the number of daily visitors, it can be concluded that the recommended standards can not be achieved since that would require a drastic increase of beach surface area. Such an intervention would result in a disturbance of the skyline and ecological devastation of the coastal area. In order to meet the physical, environmental and social aspects of the carrying capacity, a minimum increase of beach surface is recommended so as to secure a maximally acceptable carrying capacity of (approximately) 5 m² per beach user for all visitors (based on the existing estimate of 10,000). In any case, the actual increase can only be agreed on the basis of a study of optimum increase of the beach surface area, and environmental impact assessment study (and, if necessary, nature impact assessment study). Such expansion of beaches could be completed by summer 2010.

vi. Introduction of a charging system for the use of beach facilities and resources

One of the key activities of the Beach Management Agency will be to plan and provide administrative conditions for the introduction of a charging system for the use of the beach resources of Baška Voda. The introduction of the charging measures will be preceded by a detailed public opinion poll (among both local population and tourists) on the charging system itself and on their readiness to pay for the use of beach facilities. The polling should be done systematically throughout the summer season before the introduction of the measures (2009).

This Action Plan recommends the introduction of entry fee for the *Nikolina* beach (by summer 2010) because it will be easiest to do it there (owing to its natural features and well-organised access). However, the Baška Voda Municipality, the Tourist Bureau and the Agency may agree to introduce charges for other beaches or their parts.

It is recommended to use the so-called "card system", where the local population, tourists and seasonal workers receive a card enabling them "free" entrance. All the others would pay a fee directly at the entrance gate (10-15 kuna per person). It has to be pointed out that each of the groups that will receive entry cards will pay the charge indirectly, either through higher accommodation rates, higher communal charge, or similar. Thus, beach access would be secured

²³ Regulation on types of habitat categories, map of habitats, endangered and rare habitat categories and measures to protect the habitat categories (Official Gazette, 2006).

for all at equal terms (i.e. everybody pays²⁴). This has been defined by the Law on Maritime Public Domain and the (proposed) Baška Voda Land-use Management Plan. By paying the "beach entry fee" the visitor actually pays for the use of the facilities provided on the beach (showers, toilets, etc.), and not access to the sea and/or public domain. The income realised through the charge for the use of the beach resources (either directly through entrance fees, or indirectly through accommodation rates, eco-tax, etc.) has to be used only for further maintenance of the beach and beach facilities. All the beach users have to be informed accordingly (through information boards placed on the beach, and the like).

Charging of "beach entry fees" can not be introduced for all Baška Voda beaches since that would provoke undesirable reactions, primarily by the local population. However, the fact that entry fee is charged for one beach and not for any other (although the level of service and facilities on those other beaches is much lower) can lead to increased pressure on those other beaches. In order to avoid that, additional instruments have to be applied to the other beaches (Uranija and Ilovac-Podluka) by summer 2011. Namely, each user should pay for the use of services that have been free so far (showers, toilets), as well as pay more for the use of other services/facilities (umbrellas, deck chairs, sports facilities, etc.). The price of those services would be higher than on the Nikolina beach. The income thus realised should only be used for further maintenance of the beaches and beach facilities.

vii. Construction of additional parking areas outside the town centre and increased parking fees

In order to further discourage pressure on the beaches and arrival of "day visitors", by 2012 the parking fee would be increased by at least 50%. Also, construction would be launched of additional parking areas outside the town centre in order to alleviate the pressure on the centre during the tourist season.

viii. Introduction of "eco-tax" charging system for day visitors

Along with the existing daily charge for the visitors arriving by bus, by 2012 "eco-tax" charging would be introduced for visitors arriving by car. It would be realised through the daily parking fee, increased by a sum corresponding to the amount of the tourist tax per person. The purpose of the "eco-tax" will be clearly explained through communication materials: leaflets, boards, information on the ticket.

ix. Information and strengthening of public awareness

Introduction of various instruments, such as charging "beach entry fee" or increased charge for the use of beach facilities and parking, may provoke negative public reaction. It is, therefore, of utmost importance to provide systematically the general public with appropriate information, and to raise their awareness of the need for introduction of such instruments in order to secure sustainable beach management. This would be one of the key activities of the Beach Management Agency since its very inception (in collaboration with the Tourist Bureau). The activity will include the following:

- organisation of round-table discussions, gatherings and workshops to inform the general public of all the aspects of introduction of those measures;
- publishing of information brochures and leaflets;
- launching of the Agency's web-site with all the information of the planned beach management measures;
- collaboration with media through interviews, media reports and press conferences.

²⁴ Although the fee charged at the entrance can be higher than the one paid through increased accommodation fee and the like

x. Increased personnel in charge of beach cleaning

In the summer period, the Agency would employ at least four persons to be in charge of regular and continuous cleaning of the beaches and maintenance of order on the beaches. Particular attention will be paid to the removal of cigarette butts and broken glass.

xi. Analysis of causes of reduced seawater quality for bathing

During 2005 and 2006, the sea water quality of all Baška Voda beaches was found to be suitable for bathing (2). Although these results indicate good-quality sea, one of the objectives of sustainable beach management is raising the sea water quality to the level of high-quality bathing water (1). In order to achieve that, it is recommended to prepare a detailed analysis of the sources of "pollution" (by end 2010)

xii. Reduction of causes of reduced seawater quality for bathing

Based on the analysis of the sources of "pollution" an appropriate plan will be made and action will be taken to remove the sources of pollution. This activity will be undertaken only if economically justifiable.

xiii. Introduction of measures to reduce litter on the beaches

As basic measures to remove litter from the beaches, apart from seasonal employment of personnel in charge of daily cleaning/maintenance of the beaches, additional waste bins will be provided, as well as cigarette butt cans and thrash cans for garbage separation.

xiv. Preparation of a feasibility study for the introduction of composting toilets on the beaches

In order to reduce to a minimum the negative effects of the catering facilities and bathers on the seawater quality, the possibility will be examined of placing ecological (composting) toilets on all beaches. For example, there is the Clivus composting system (<http://www.multrum.com/Croatia/>) that has proved exceptionally efficient in Scandinavia, USA and Canada, especially in protected areas and on the beaches. In Croatia, such toilets have been provided in the Mljet National Park. The initial investment is expected to be rather high, but this type of composting system has a life-long guarantee and it is expected that the long-term benefit will exceed by far the cost of its introduction. Compared to conventional wastewater treatment systems, which contribute to pollution and may produce potentially toxic substances (e.g. hydrogen sulphide, methane, various forms of alcohol, acetic acid), the composting systems produce odourless and completely harmless fertiliser in their closed systems. Advantages of composting toilets over other wastewater treatment systems are the following:

- composting facilities have no discharges and, accordingly, do not pollute;
- they have no odour owing to efficient ventilation and fully aerobic nature of the process;
- the final product can be used in agriculture as good-quality fertiliser;
- with respect to the price, the systems are exceptionally efficient with stable processes and adaptable to the conditions of any site;
- the systems do not require much space and are easy to maintain;
- waste is treated on site, thus avoiding waste manipulation.

However, to gain a full insight, by 2011 a feasibility study will be prepared for the introduction of composting or some other ecological toilets.

xv. Proposal for introduction of ecological standards for tourist facilities in the vicinity of beaches

One of the activities of the Beach Management Agency will be encouraging the near-by hotels to introduce ecological standards in their operation. This can refer to a more efficient use of energy, reduced water consumption, use of exclusively local (ecological) agriculture and other products, etc. Within the energy efficiency programme of the United Nations Development Programme (UNDP) – Croatia, <http://energetska-efikasnost.undp.hr>) it is possible to have prepared energy

assessment of each hotel (at no cost – in co-operation with the County). The free-of-charge energy assessment includes a visit by an expert who identifies spots at which most energy is used or lost, and suggests possible solutions to save both money and energy. One of the stimulating measures for the hotels to adopt ecological standards could be the introduction of eco-certificates for hotels. However, such certification can only be introduced within a general sustainable tourism policy planned and implemented by the Baška Voda Municipality in collaboration with the Tourist Bureau.

xvi. Preparation of environmental impact assessment study for beach expansion

Before expanding the beach area it is necessary (and required by the law) to prepare an environmental impact assessment study. On the basis of an analysis of currents, waves, winds, quality of beach material, etc., the study assesses the impact of beach expansion on the coastal environment, sea fauna and landscape. That study should also assess the impact of beach expansion on tourism (and *vice versa*), as well as justification for such a project from the social point of view.

The implementation of the project can only be launched if the study results are positive. Apart from that, beach expansion has to be envisaged by the Physical Plan of the Municipality.

xvii. Opinion poll among beach users on beach cleanliness

In order to monitor the level of satisfaction of beach users with the cleanliness of the beaches it is necessary to perform regular polling. The polling on beach user satisfaction should include all the facilities and services on offer, environmental quality, etc. It should be performed on all beaches, throughout the season. To perform the poll and analyse the results, the Agency may use its own resources or engage sociology students or an association with appropriate experience.

xviii. Introduction of new facilities on all beaches

One of the indicators included in the poll will be the satisfaction of the beach users with the offered facilities and proposal for the introduction of new ones. Based on the polls performed earlier, it is recommended to increase, by 2010, the number of sports facilities, but outside the designated bathing area. Also, it will be necessary to better arrange the existing children entertainment facilities (Ikovac-Podluka beach) and add new ones, such as sandpile. It will also be necessary to increase the number of changing booths, especially on the Ikovac beach.

xix. Opinion poll among beach users on their satisfaction with beach facilities and overcrowding

Apart from beach user satisfaction with beach facilities and services, the polling should include their opinion if the beaches are overcrowded. That would be an important indicator for the newly-established Agency for its future work.

IV. Recommendations

Based on the pilot project analysis, a number of recommendations can be made, as follows:

1. Perform a more comprehensive survey of tourism in Baška Voda

The current tourism surveys in Baška Voda are performed in non-structured way and on a relatively small sample. It would be beneficial to do a tourist analysis following an appropriate methodology. Also, the analysis should be done on a much larger sample and in different periods during the season. Preferably, it would be beneficial to include tourists staying at all types of accommodation (hotels, apartments, private accommodation). Such analysis should enable a better understanding of the demographic structure of tourists, length of their stay, their preferred type of accommodation, satisfaction with value-for-money and their average expenditure.

2. Perform a more comprehensive survey on beach users in Baška Voda

A detailed analysis of the number of beach users, their satisfaction with the beach environmental and safety conditions, facilities and crowdedness on the beach should be made. Also, it would be very useful to assess their willingness to pay for the improvement of beach environmental and recreational conditions, as well as the amount they would be willing to pay.

3. Develop a sustainable tourism development plan

A strategic plan of sustainable tourism development should be defined. The plan should be fully in line with the current (destination and county) physical plans. It is extremely important that tourism development proposals are **fully harmonised with the destination and beach carrying capacity limits**. Increase of tourism accommodation facilities (hotels, apartments and, in particular, private accommodation), should preferably be prevented and adjusted to the defined carrying capacity limits.

4. Develop a detailed beach management strategy (for the entire Municipality)

A strategy should be created, to include all the beaches of the Municipality (including the settlements of Baška Voda, Baško Polje, Topići, Bast, Krvavica, Bratuš and Promajna). Within the strategy, the management type and instruments to be applied should be defined.

5. Create a campaign to follow the beach management strategy

Any new instrument that could be applied for environmentally and economically sustainable beach management might cause controversy among the local population. This could particularly be the case if entrance fees are introduced. Therefore, it would be extremely important to organise an awareness raising campaign to announce the application of the new instrument(s), and to explain all the benefits and general outcomes of such an action to the local population. Such a campaign should include production of posters and leaflets, organising meetings and workshops, and ensuring substantial media coverage.

6. Development of a feasibility study for the beach enlargement

According to some data, in the peak of the season, there can be more than 10,000 tourists at a given time in the destination. This figure exceeds significantly the maximum tolerable beach carrying capacity. Therefore, it might be justified to initiate a project for beach surface enlargement. However, such an initiative must be supported by a feasibility study. This project could be undertaken only if the study finds it environmentally, socially and ecologically sustainable.

7. Perform environmental and nature impact assessment

If the feasibility study shows the justification for the beach enlargement, the legally prescribed impact assessments should be performed (environmental impact assessment, and, if necessary, nature impact assessment).

8. Establish an agency for beach management of the Municipality of Baška Voda

Based on the analysis and all the necessary preparatory activities, a new agency for the beach management should be established. At first, it should be part of the local Municipality, but with a long-term goal of becoming fully self-sustained.

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Appendix I: The Questionnaire



REPUBLIKA HRVATSKA
Županija Splitsko- dalmatinska
OPĆINA BAŠKA VODA

Sustainable Tourism in Croatia

This Inquiry Form is anonymous. It will be used for research within the UNEP and PAP/RAC project for development of Methodological Handbook for Sustainable Coastal Tourism Development.

Date:.....

Place:.....

1. Why did you choose Baška Voda for your holiday destination?

- | | |
|---|---|
| <input type="checkbox"/> Good recreational activities offered | <input type="checkbox"/> Quality of accommodation |
| <input type="checkbox"/> Quality of gastronomic offer | <input type="checkbox"/> Quality of beach (bathing areas) |
| <input type="checkbox"/> Nature beauties | <input type="checkbox"/> Other (please specify)..... |

2. Are you satisfied with the quality of tourism services (activities, attractions, bars, restaurants,...) in Baška Voda?

- | | | |
|---|---|--------------------------------------|
| <input type="checkbox"/> Very satisfied | <input type="checkbox"/> Satisfied | <input type="checkbox"/> Indifferent |
| <input type="checkbox"/> Unsatisfied | <input type="checkbox"/> Very unsatisfied | |

3. If not, please specify why

4. Why did you come to this beach?

- | | |
|--|---|
| <input type="checkbox"/> Good recreational facilities offered (pedalos, tuba, restaurants, umbrellas, ...) | <input type="checkbox"/> It is near hotel/accommodation I'm staying |
| <input type="checkbox"/> Clean sea | <input type="checkbox"/> It has adequate/convenient parking |
| <input type="checkbox"/> Safety (presence of lifeguard, etc) | <input type="checkbox"/> Other (please specify)..... |

5. Are you satisfied with the beach environmental quality?

- | | | |
|---|---|--------------------------------------|
| <input type="checkbox"/> Very satisfied | <input type="checkbox"/> Satisfied | <input type="checkbox"/> Indifferent |
| <input type="checkbox"/> Unsatisfied | <input type="checkbox"/> Very Unsatisfied | |

6. If not, please specify why

7. Are you satisfied with the quality of beach facilities?

- | | | |
|---|---|--------------------------------------|
| <input type="checkbox"/> Very satisfied | <input type="checkbox"/> Satisfied | <input type="checkbox"/> Indifferent |
| <input type="checkbox"/> Unsatisfied | <input type="checkbox"/> Very unsatisfied | |

8. If not, please specify why

9. Are you willing to pay to improve the beach quality?

- | | |
|---|--|
| <input type="checkbox"/> Yes, as entrance fee | <input type="checkbox"/> Yes, as obligatory facilities utilisation |
| <input type="checkbox"/> Yes, as voluntary facilities utilisation | <input type="checkbox"/> Yes, as additional (higher) parking fee |
| <input type="checkbox"/> No | |

10. For which type of improvement are you willing to pay?

- | | |
|---|---|
| <input type="checkbox"/> Litter collection | <input type="checkbox"/> Natural environment |
| <input type="checkbox"/> Increased number of lifeguards | <input type="checkbox"/> Improved toilet facilities |
| <input type="checkbox"/> Other (please specify) | |

11. If yes, please specify how much Euro per day

<i>Personal characteristics</i>

Sex

- | | |
|------------------------------------|-----------------------------------|
| <input type="checkbox"/> Masculine | <input type="checkbox"/> Feminine |
|------------------------------------|-----------------------------------|

Age

- | | | |
|--------------------------------|-----------------------------------|--------------------------------|
| <input type="checkbox"/> 16-24 | <input type="checkbox"/> 25-34 | <input type="checkbox"/> 35-49 |
| <input type="checkbox"/> 50-64 | <input type="checkbox"/> Above 65 | <input type="checkbox"/> |

Nationality

Appendix II: Bathing Area Registration and Evaluation (BARE) Form

Section I: Background information

Name:

Current classification:

Type:

Natural beach		Urban	
Nourished beach		Village	
Rocky shore		Rural	
Resort		Remote	

Length (m): Width (m): Shape: Slope:

Rough sketch of bathing area

Table 1.1: Beach sediment characteristics*

Colour:					
Geological composition					
	% cover	Size		% cover	Size
Sand			Cobble		
Gravel			Rocks		
Pebble			Other (e.g. concrete)		

Sea floor (%): Sand: Stones: Cobble/Pebble: Rock:

Shore type (%):** Sand beach: Gravel beach: Pebble beach:
Cobble beach: Rocky shore: Concrete quay:

Backshore type (%): Wooded: Cliff: Other:

* *beach sediment characteristics* refers to the beach itself that either form a limited part of the shore (e.g. in a pocket beach environment having boulder or rocky shore edges) or be representative of the entire / large part of shore (as in the case of long linear beaches).

** *shore type* in the same table refers to the entire shore visible to the beach user which may include boulder shore, concrete piers, shore platforms etc.

Responsible authority:

Municipality:

N°. of staff engaged with beach management:

Date of initial registration:

Date of field survey:

Accessibility:**To site:**Public beach: By road ☐By walk ☐Public transport ☐

Private beach:

Ownership type ☐Entrance fee ☐**To water environment:**Gentle / steep underwater slope ☐**Beach erosion:**

Are there obvious signs of erosion/deposition?

Yes ☐ No ☐

Is there present or has there been past monitoring of erosion?

Yes ☐ No ☐

If so, by whom?

Are there known records or erosion maps available?

Yes ☐ No ☐

If so, where?

Table 1.2: Beach occupancy rates

Time of year	Number of bathers (11.00 hrs) ***	Number of bathers (16.00 hrs) ***	% beach occupancy
Whole bathing season			
Bathing season week-day			
Bathing season week-ends			
Non-bathing season			

*** Beach users on beach and in water

Beach-use orientation:**Table 1.3: Main usage**

Jet-skiing		Sailing		Motor boating	
Fishing (shore/boat)		(Wind) Surfing		Tourism yachting / day cruises	
Walking		Diving		Other (sporting activities)	
Sunbathing		Swimming		Picnicking	

Table 1.4: Designated sensitive area in the bathing area

	Yes	No
Resting place for water fowl / mammals		
Breeding place for rare birds / mammals		
Sanctuary		
Conservation area		
Area having high biodiversity / ecologically sensitive area		
Archaeological sites		
Other kind of protected area e.g. Heritage sites		

Section II: Rating parameters**Table 2.1: Safety parameters**

Safe bathing environment including:	
▪ a bathing environment slope < 1:10;	
▪ wave height < 0.5 m for at least 80% of the bathing season	
▪ absence of rip currents outside storm conditions	
Lifeguards (inclusive of sea craft-based lifeguards).	
Bather/boating zonation markers	
Fixed safety equipment	
First aid posts	
Beach safety information notices (on safe code of conduct, presence of rip currents, telephone number and location of nearest health centre, latest records for water quality monitoring, other).	
Emergency phone facilities	

Table 2.2: Water Quality

National bathing season monitoring programme results (Year report)					
Barcelona Convention criteria		<i>Bathing Water Directive (76/160/EEC)</i>			
Passed	<i>Blue Quality</i>				
	<i>Green Quality</i>				
	<i>Orange/Red Quality</i>				
Failed	<i>Black Quality</i>				
Potential influences of poor water quality	Sewage outlet				
	Sewage pipes				
	River mouth				
	Harbour areas				
	Other e.g known absence of sewerage system				
Visual observations along 100 m of shoreline		A	B	C	D
Floating debris	Sewage related	0	1-5	6-14	> 14
	Other e.g. plastics, wood	0-10	11-20	21-30	> 30
Oil		0	1-5	6-14	> 14
Sea-bottom debris		0-10	11-20	21-30	> 30

Table 2.3: Beach facilities (tick where present and indicate number where possible)

Clean toilets	Public		Regularly emptied litter bins		Clean showers	Public	
	Restaurant					Restaurant	
Hotels / Star rating			Summer houses for rent		Bed & Breakfast accommodation		
Apartment complexes			Camping grounds				
Restaurants			Snack bars		Freshwater tap		
Adequate parking facilities (see beach carrying capacity)			Information notice		Security boxes		
Sun beds	mattress		Legal / policy restrictions to water-based sport facilities		Speed boat towing activities (e.g. banana boat, tubing, skiing)		
	nylon						
	Wood/plastic						
Sail boating			Scuba-diving		Wind surfing		
Pedaloos			Para-sailing		Jet-skiing		
Cigarette receptacles			Wheel chair access		Tiki-huts / umbrellas		

Table 2.4: Evaluation of *Hinterland Scenery* within walking distance and generally visible from the beach. In the context of bathing area quality evaluation, scenery is the only parameter that takes cognizance of a wider range of aspects outside the bathing area. To this end, a Coastal Scenic Evaluation technique is applied (A. Ergin, E. Karaesmen, A Micallef and A T Williams, 2004. A new methodology for evaluating coastal scenery: fuzzy logic systems. (In): *Area* (2004) 36. 4, 367 – 386).

(See 'Coastal Scenic Evaluation System', *next sheet*).

Overall bathing area classification by Coastal Scenic Evaluation technique	Class:
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Coastal Scenic Evaluation System

Site name:

No.	Physical Parameters		Rating					
			1	2	3	4	5	
1	Cliff	Height	Absent	5-30 m	30-60 m	60-90 m	> 90 m	
2		Slope	Absent	Around 45°	Around 60°	Around 75°	Circa Vertical	
3		Special Features*	Absent	1	2	3	Many (> 3)	
4	Beach Face	Type	Absent	Mud	Cobble / Boulder	Pebble / Gravel (+Sand)	Sand	
5		Width	Absent	< 5 m or >100 m	5-25 m	25-50 m	50-100 m	
6		Colour	Absent	Dark	Dark Tan	Light Tan / Bleached	White / Gold	
7	Rocky Shore	Slope	Absent	< 5°	5°-10°	10°-20°	20°-45°	
8		Extent	Absent	< 5 m	5-10 m	10-20 m	> 20 m	
9		Roughness	Absent	Distinctly Jagged	Deeply Pitted and/or Irregular (uneven)	Shallow Pitted	Smooth	
10	Dunes		Absent	Remnants	Fore-dune	Secondary Ridge	Several	
11	Valley		Absent	Dry Valley	(< 1 m) Stream	(1-4 m) Stream	River / Limestone gorge	
12	Skyline Landform		Not Visible	Flat	Undulating	Highly Undulating	Mountainous	
13	Tides		Macro (> 4 m)		Meso (2-4 m)		Micro (< 2 m)	
14	Coastal Landscape Features**		None	1	2	3	> 3	
15	Vistas		Open on one side	Open on two sides		Open on three sides	Open on four sides	
16	Water Colour & Clarity		Muddy Brown / Grey	Milky Blue / Green, Opaque	Green / Grey Blue	Clear Blue / Dark Blue	Very Clear Turquoise	
17	Natural Vegetation Cover		Bare (< 10% vegetation only)	Scrub / Garigue (marram/gorse, bramble, etc.)	Wetlands / Meadow	Coppices, Maquis (+/- Marure Trees)	Variety of Mature Trees / Mature Natural Cover	
18	Vegetation Debris		Continuous (> 50 cm high)	Full Strand Line	Single Accumulation	Few Scattered Items	None	
	Human Parameters		1	2	3	4	5	
19	Noise Disturbance		Intolerable	Tolerable		Little	None	
20	Litter		Continuous Accumulations	Full Strand Line	Single Accumulation	Scattered	Virtually Absent	
21	Sewage Discharge Evidence		Sewage Evidence		Some Evidence (1-3 items)		No Evidence of Sewage	
22	Non-built Environment		None		Hedgerow / Terracing / Monoculture		Field Mixed Cultivation +/- Trees / Natural	
23	Built Environment**		Heavy industry	Heavy Tourism and/or Urban	Light Tourism and/or Urban and/or Sensitive Industry	Sensitive Tourism and/or Urban	Historic and/or None	
24	Vehicular Impact		No Buffer Zone Traffic, Car Park Visible	No Buffer Zone / Light Traffic		Parking Lot Visible from Coastal Area	Parking Lot Not Visible from Coastal Area	
25	Skyline		Very Unattractive	Unattractive	Sensitively Designed High / Low	Very Sensitive Designed	Natural / Historic Features	
26	Utilities****		> 3	3	2	1	None	

* Cliff Special Features:

Indentation, banding, folding, screes, irregular profile.

** Coastal Landscape Features:

Peninsulas, rock ridges, irregular headlands, arches, windows, caves, waterfalls, deltas, lagoons, islands, stacks, estuaries, reefs, fauna, embayment, tombola, mud flats, attractive offshore breakwaters/groynes, etc.

*** Built Environment:

Caravans will come under Tourism, Grading 2: Large intensive caravan site, Grading 3: Light, but still intensive caravan sites, Grading 4: Sensitive designed caravan sites.

**** Utilities:

Power lines, pipelines, unattractive street lamps.

Table 2.5: Litter survey (based on EA/NALG 2000 protocol) – tick appropriate box

Category	Type	Rating (based on lowest scored litter category)			
		A	B	C	D
Sewage Related Debris	General	0	1-5	6-14	15+
	Cotton buds	0-9	10-49	50-99	100+
Gross Litter		0	1-5	6-14	15+
General Litter		0-49	50-499	500-999	1000+
Harmful Litter	Broken glass	0	1-5	6-24	25+
	Other	0	1-4	5-9	10+
Accumulations	No.	0	1-4	5-9	10+
Oil		Absent	Trace	Nuisance	Objectionable
Faeces		0	1-5	6-24	25+

Appendix III: Different Economic Instruments as Different Options within Action Plan

Option 1: Introducing "magnetic cards" entrance fee

In the beginning, it is recommended to introduce entrance fee for only one of the three main beaches of Baška Voda, i.e. the Nikolina beach. This beach already provides the greatest number of facilities, has the largest surface and attracts the highest number of bathers.

According to the already existing proposals, entrance fee can be introduced through the application of the so-called magnetic cards. Different magnetic cards would be applied for different groups of bathers. Each bather group would get a card of different colour. For example, local inhabitants and secondary house owners would have a white card, guests a blue one, and seasonal employees a green card. The rest would be obliged to pay an entrance fee. Local inhabitants and secondary house owners (together with their family members) would get the cards "for free". Actually, they would pay it through their monthly taxes (which would be slightly increased). Guests would get their cards "for free" upon check-in in the hotel/apartment/bed and breakfast accommodation. As in the case of the locals, their beach entrance would actually be paid through their accommodation price that would be increased by 1 Euro per day. It is very important that each of these groups of bathers pays for the beach use, but in such a way that they don't feel it as an additional tax. All the rest (mainly day trippers, but also all the guests staying in unregistered accommodation) would have to pay upon beach entrance. It is recommended that this price be between 2 and 3 Euro per day. Within that price the bathers would be provided with free showers, tap water and toilet use. The use of other facilities, such as sun-beds, umbrellas, water-based sport facilities, etc. should be paid additionally. These provisions should be clearly indicated on a beach information board. All the funds raised through such arrangements should be collected by the beach management agency and used only for improvement and maintenance of the beach facilities.

In the long run this option could also be applied for one of the remaining two beaches. It is strongly recommended that at least one beach be fully open for public. Still, should that create extreme pressure from bathers on that beach, additional measures (such as obligatory use of facilities or voluntary use of facilities with increased price) could be applied.

Alternatively to the introduction of magnetic cards, entrance fee could be paid directly by all the bathers (including the locals). However, it can be expected that such an option would create considerable resistance, especially from the local residents. The magnetic card option could also meet resistance of the local community, especially in the beginning. This is why it would be crucial to have an awareness-raising campaign for at least one year prior to the introduction of the instrument. It is believed that this option would reduce pressure from bathers on the beach, especially daily trippers, that it would raise funds necessary for adequate beach maintenance, and that it would reduce grey economy in the tourism business, i.e. it would reduce the number of unregistered guests in private accommodation.

Option 2: Obligatory use of facilities

Instead of entrance fee introduction, obligatory use of facilities could be applied. This means that each beach user would be obliged to use some facilities (such as sun-beds and umbrellas) and pay for their use. The number of available sun-beds on the beach would be in line with the pre-defined carrying capacity limits. This means that once all the sun-beds are in use, no additional bathers would be allowed on the beach. In this way, beach managers would directly control the number of bathers at a given time. Use of the facilities would not be obligatory but it should be paid anyway.

This concept could be applied on two of the three beaches of Baška Voda. Same as with the previous option, the funds raised in this way would be used for the beach facilities improvement and maintenance.

This option could be supported or substituted by voluntary use of facilities. In that concept the beach users would not be obliged to use certain facilities but the fee that they have to pay for the use (of

showers, toilets, sun-beds, etc.) would be higher than the usual, for example 10% (than in summer 2007). This 10% difference would also be used for beach facilities improvement and maintenance. This should be clearly stated on the beach information board so that the beach users are aware that with the use of facilities they support the beach maintenance. This concept might be more plausible for the beach users, but in this way no control of the number of bathers could be achieved, nor is there certainty that adequate funds will be gained to sustain the necessary beach maintenance.

No matter which option of the use of facilities concept is to be applied, it would be crucial to have an awareness-raising campaign for at least one year prior to the introduction of the instrument.

Option 3: Parking charge

The number of beach users could also be controlled through the control of the number of cars that can access Baška Voda. This could mean that no additional parking spaces are provided in the city centre (near Nikolina and Ikovac-Podluka beaches). Additional parking might be created near the Uranija beach (on the way to Baško Polje). Also, a higher parking fee should be applied.

Daily trippers should be obliged to pay a "daily tax" upon entering Baška Voda. All those coming for more than one day would be excluded from paying such a tax. The length of their stay would be easy to prove by hotel/apartment/bed and breakfast "certificate" that they would get upon accommodation reservation.

Upon daily tax payment or parking lot use, the car driver would get a ticket clearly indicating that a certain percentage of the amount paid would be used for beach maintenance.

Option 4: Combination

If none of these options is found to be fully appropriate, a combination of the above-listed instruments can be applied. Of course, it would be difficult to apply all of them at once, but they should be introduced in stages. For example, the first year an increase of the parking fee, together with the entrance fee on one of the beaches (e.g. Nikolina) could be applied. The next year, obligatory/voluntary use of facilities could be applied on the two remaining beaches. Finally, the third year, daily tax could be introduced.

No matter which option is applied, it is extremely important that continuous survey of the users' perception is conducted. These results could help the beach authorities in modifying the applied option(s) in order to obtain optimum results.

Also, it should be pointed out that these options could be applied without a specialised beach management agency, but that would be extremely difficult and it is not likely that the results would be as successful as if there were a specialised body in charge of preparing and introducing these changes.



