

## ANALYSIS OF THE TOURISTS' OPINION CONCERNING THE INVESTMENTS IN THE DANUBE DELTA

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### Abstract

*The Danube Delta is a poorly developed area, but it has tremendous potential. The European Union will allocate the Danube Delta by 2020, with the possibility of extending for an additional three years the amount of 1.3 billion euros for infrastructure, tourism and jobs. In this paper we analysed, based on the questionnaire, the opinion of the tourists who visited the Danube Delta regarding the future investments aimed at developing the Danube Delta reservation. The questionnaire was applied on a sample of 1,067 tourists, from 1 March 2017 to 31 January 2018, in the following localities: Crișan, Murighiol, Sulina, Mila 23, Sfântu Gheorghe, Caraorman, Periprava, Maliuc, Gorgova and Dunavățu de jos. The tourists' opinion on the investments that should be made for the development of this area, 55% think that investments in road infrastructure should be made, 23% in actions to promote the tourist potential of this area, 15% consider it necessary investment in utility infrastructure, and 5% of them consider the number of tourist units to be insufficient.*

**Key words:** Danube Delta, infrastructure, investments, questionnaire, tourists

### INTRODUCTION

The territory of the Danube Delta Biosphere Reserve, delineated according to the law, has a total area of about 580,000 hectares and it is located in south-eastern part of Romania, including the Danube Delta itself, Razim-Sinoie Lake Complex, the Danube Marine to Cotul Pisicii including the floodplain area Somova-Parcheș, Lake Sărături-Murighiol and the marine area between the seaside and the isobata of 20 m. The geographical position of the Reserve is defined by the following geographical coordinates: 28 ° 10'50 " (Cotul Pisicii) and 29°42'45" (Sulina) eastern longitude; 45°27'(Chilia branch, km 43) and 44°20'40 " (Cape Midia) north latitude (Honțuș, 2015) [3].

Of the total area of the Reserve, more than half (312,440 ha) are the natural aquatic and terrestrial ecosystems included in the list of UNESCO World Heritage Sites as well as those for ecological reconstruction, which are the public domain of national interest. The territory of the Reservation is located in the administrative territories of 3 counties: Tulcea (87.73%), Constanța (12.23%) and Galati

(0.14%). The Government of Romania has decided that the largest investments will be made here at the national level. The European Union will allocate 1.3 billion Euros to infrastructure, tourism and jobs by 2020, with the possibility of extending for a further three years. Approximately 70% of the amount will be given to public units that will spend the money from infrastructure to biodiversity, with the rest of the money being attracted to the locals (Crețu et al., 2017) [2]. The Managing Authority for the Operational Program for Fisheries and Maritime Affairs 2014-2020 announced the launch of 12 calls for applications for financing dedicated to the development of the fisheries sector in the ITI Danube Delta. On all 12 lines of funding, about 27 million Euros is currently available to the potential beneficiaries. The Strategy for the 2014-2020 Operational Program for Fisheries and Maritime Affairs (POPAM) aims primarily to increase production in aquaculture and processing as well as to increase operator profitability, biodiversity conservation and environmental protection, maintaining and creating jobs, especially in fisheries areas (Popescu et al., 2017) [4]

(Toma, 2014) [5]. The Ministry of Regional Development, Public Administration and European Funds has recently launched calls for proposals POR/165/2 (2.1.B - Business Incubators) and POR/179/2 (2.1.B.ITI - Business Incubators - ITI Danube Delta) related to Priority Axis 2 - Improving the Competitiveness of Small and Medium Sized Enterprises, Investment Priority 2.1 - Promoting Entrepreneurship, in particular by facilitating the economic exploitation of new ideas and by encouraging the creation of new

businesses, including business incubators. For the ITI Danube Delta, the financial allocation is more than generous, almost 12 million euro, the novelty of this appeal being that among the potential applicants were also the territorial administrative units. Recently, the contract for one of Romania's most important infrastructure projects - the design and execution of the *Suspended Bridge on Danube* project was signed. The value of the project is about 500 million Euros.

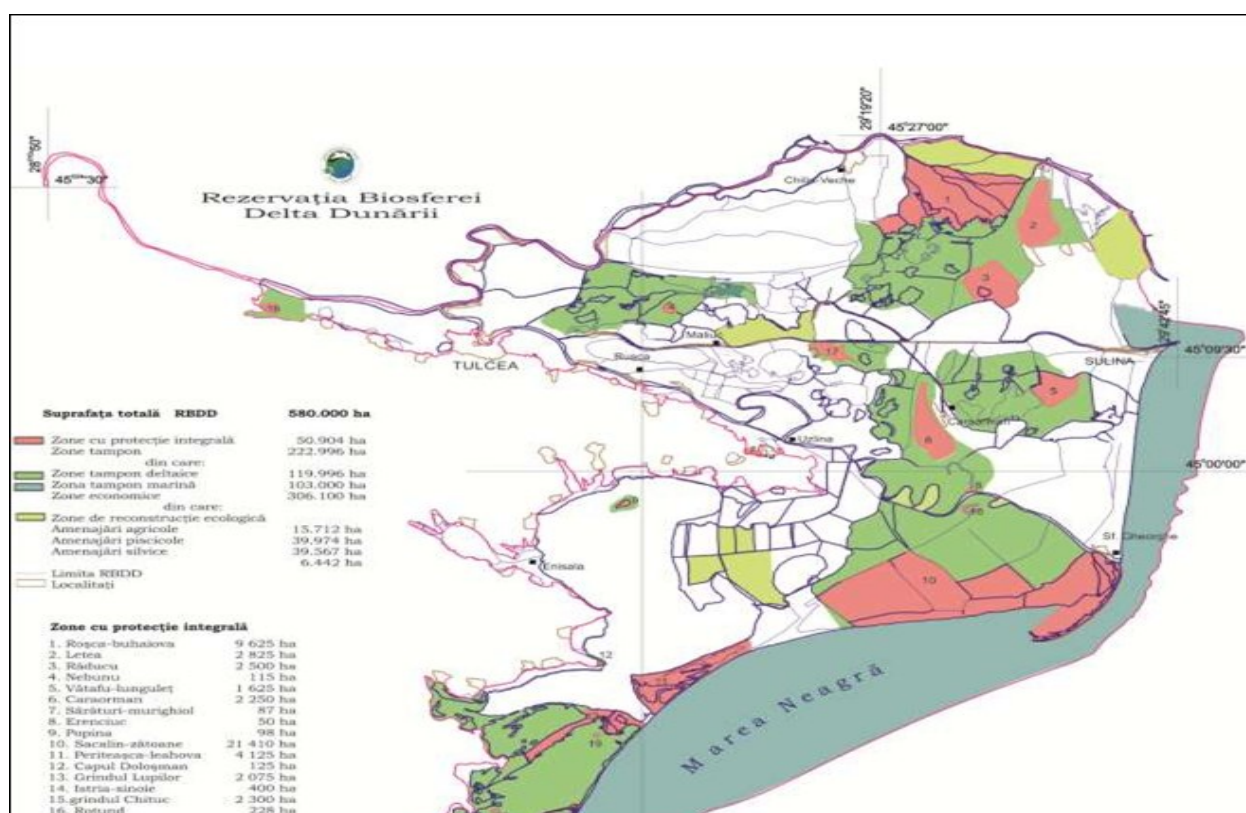


Fig. 1. Danube Delta Biosphere Reserve-functional areas with differential protection scheme  
 Source: (ARBDD, 2015) [1]

## MATERIALS AND METHODS

The questionnaire was applied to a sample of 1,067 tourists from 1 March 2017 to 31 January 2018 in the following localities: Crișan, Murighiol, Sulina, Mila 23, Sfântu Gheorghe, Caraorman, Periprava, Maliuc, Gorgova and Dunavățu de jos. Of the total respondents interviewed, 41.58% are between 41 and 60 years of age, followed by those aged between 26 and 40, with a 37.62% share, and at the opposite aged over 60 (11.88%) and those aged between 18 and 25 years (8.91%).

## RESULTS AND DISCUSSIONS

### Tourists' opinion on future investments destined to be developed in the Danube Delta's reservation according to their age.

The tourists' opinion on the investments that should be made for the development of this area, 55% think that investments in road infrastructure should be made, 23% in actions to promote and disseminate the tourist potential of this area, 15% consider that there is a need for investment in utility infrastructure and 5% of them consider the

number of agritourism units to be insufficient (Table 1).

Table 1. Structure of tourists' opinion on future investments aimed to developing the Danube Delta's reservation according to their age

Where do you think should be made the future investments in the Danube Delta natural reserve?								
The tourist's age								
Age (years)	U.M.	In capacity of agritourism accommodation	In the road infrastructure	In the utility infrastructure	Actions of promotion and broadcasting	Other	Total	
		No.	No.	No.	No.	No.	No.	%
18 – 25	No.	0	3	0	5	1	9	9%
26 – 40	No.	3	23	8	4	0	38	38%
41 – 60	No.	2	23	6	10	1	42	42%
> 60	No.	0	7	1	4	0	12	12%
Total	No.	5	56	15	23	2	101	-
	%	5%	55%	15%	23%	2%	-	100%
Standard Residue								
18 – 25	No.	-0.67	-0.89	-1.16	1.96	1.95		
26 – 40	No.	0.82	0.42	0.99	-1.58	-0.87		
41 – 60	No.	-0.05	-0.06	-0.10	0.14	0.18		
> 60	No.	-0.77	0.13	-0.59	0.77	-0.49		
Chi-Square Calculated =	17.54	Critical value (theoretical)=				18.55	p > 0.1(*)	
Degrees of freedom (df) =	12					21.03	p > 0.05(**)	
Cramer's V =	0.24					26.22	p > 0.01(***)	
Pearson's C =						0.38		

Source: Data processing from the questionnaire

The category of tourists aged between 26 and 40 and those aged starting with 41 to 60 believe that future investments should be channelled especially in road infrastructure, so that these two categories representing a share of over 45% of all interviewed. Also, in the category of tourists aged between 41 and 60 years, 9.9% of the total respondents consider that should have investments in actions to promote and disseminate the

tourism potential of the Danube Delta (Table 1). **Tourists' opinion on future investments destined to be developed in the Danube Delta's reservation depending on how they get used to go in holiday.**

Among the tourists who choose to go on holiday with their friends, over 29% of the total respondents believe that the investments to be made in the Danube Delta should aim especially the road infrastructure.

Table 2. Structure of the tourists' opinion on future investments aimed at developing the Danube Delta reservation depending on how tourists get used to go in holiday

Where do you think should be made the future investments in the Danube Delta natural reserve?								
The way they like to go on holiday								
Specificare	U.M.	In capacity of agritourism accommodation	In the road infrastructure	In the utility infrastructure	Actions by promotion and broadcasting	Other	Total	
		No.	No.	No.	No.	No.	No.	%
With friends	No.	2	30	4	10	0	46	46%
In the couple	No.	1	5	3	6	1	16	16%
In family	No.	2	21	8	7	1	39	39%
Total	No.	5	56	15	23	2	101	-
	%	5%	55%	15%	23%	2%	-	100%
Standard Residue								
With friends	No.	-0.18	0.89	-1.08	-0.15	-0.95		
In the couple	No.	0.23	-1.30	0.40	1.23	1.21		
In family	No.	0.05	-0.13	0.92	-0.63	0.26		
Chi-Square Calculated =	9.16	Critical value (theoretical)=				13.36		
Degrees of freedom (df) =	8					15.51	p > 0.05(**)	
Cramer's V =	0.21					20.09	p > 0.01(***)	
Pearson's C =						0.29		

Source: Data processing from the questionnaire.

But 9.9% of the respondents consider that it is a need to invest in actions to promote and

disseminate the Danube Delta's tourism potential.

More than 20% of all respondents, but those in the category of tourists who choose to go on holiday in the family are of the same opinion and believe that investments should focus on road infrastructure (Table 2).

**Tourists' opinion on future investments destined to be developed in the Danube Delta's reservation depending on the budget allocated for the holiday.**

Both tourists allocating for a holiday a budget of between 501 and 1,500 lei for one person,

and those who allocate over 1,500 lei/person, say that the investments should mainly target the road infrastructure. Also, most of these tourists consider that the Danube Delta needs actions to promote and disseminate this region, accounting for over 12% of all respondents, those in the category of tourists who allocate on average between 501 and 1,500 lei/ person for a holiday (Table 3).

Table 3. Structure of the tourists' opinion regarding the future investments aimed at developing the Danube Delta reservation according to the budget allocated for the holiday

Where do you think should be made the future investments in the Danube Delta natural reserve?									
The budget allocated to the holiday									
Allocated budget	U.M.	In capacity of agritourism accommodation	In the road infrastructure	In the utility infrastructure	Actions by promotion and broadcasting	Other	Total		
		No.	No.	No.	No.	No.	No.	%	
< 500 lei	No.	2	11	2	7	0	22	22%	
501 – 1,500 lei	No.	2	33	12	13	1	61	60%	
> 1,500 lei	No.	1	12	1	3	1	18	18%	
Total	No.	5	56	15	23	2	101	-	
	%	5%	55%	15%	23%	2%	-	100%	
Standard Residue									
< 500 lei	No.	0.87	-0.34	-0.70	0.89	-0.66			
501 – 1,500 lei	No.	-0.59	-0.14	0.98	-0.24	-0.19			
> 1,500 lei	No.	0.12	0.64	-1.02	-0.54	1.08			
Chi-Square Calculated =	6.94	Critical value (theoretical)=					13.36	p > 0.1(*)	
							15.51	p > 0.05(**)	
Degrees of freedom (df) =	8						20.09	p > 0.01(***)	
Cramer's V =	0.19	Pearson's C =						0.25	

Source: Data processing from the questionnaire

**Tourists' opinion on future investments destined to be developed in the Danube Delta's reservation depending on the frequency of holidays.**

By statistical testing of the tourists' opinion (Chi-Square = 20.91 \* Critical Value = 18.55 at a probability of  $p > 0.01$ ), regarding the future investments related to the development of the Danube Delta according to the frequency of holidays, there is a slight significance between the tourists' opinion on the future investments related to the development of the Danube Delta reservation and the frequency of holidays on the analysed problem.

Also, from the analysis of R (Standardized Residue), there are somewhat significant differences with regard to tourists who believe that investments should be made in other objectives than those mentioned above,

namely road infrastructure, utilities infrastructure or promotional and broadcasting actions, and those who leave on vacation every three months, allowing us to conclude that the opinion of tourists on future investments aimed at developing the Danube Delta reservation is (Table 4).

Also by Pearson's C and Cramer's V interpretations, in the present case it can be said that between the opinion of the tourists on the future investments aimed at the development of the Danube Delta reservation and the frequency of holidays (Pearson's C = 0.26; Cramer's V = 0.41), there is an association between the analysed aspects, the tourists' opinion on the future investments related to the development of the Danube Delta reservation is influenced by the holiday frequencies of the surveyed tourists (Table 4).

Table 4. Structure of tourists' opinion on future development investments of the Danube Delta Reserve according to the frequency of holiday

Where do you think should be made the future investments in the Danube Delta natural reserve?								
Holiday frequencies								
Specification	U.M	In capacity of agritourism accommodation	In the road infrastructure	In the utility infrastructure	Actions by promotion and broadcasting	Other	Total	
		Nr.	Nr.	Nr.	Nr.	Nr.	Nr.	%
At weekends	No.	1	3	0	0	0	4	4%
Monthly	No.	0	5	2	1	0	8	8%
Once every 3 months	No.	1	5	3	3	2	14	14%
On vacation	No.	3	43	10	19	0	75	74%
Total	No.	5	56	15	23	2	101	-
	%	5%	55%	15%	23%	2%	-	100%
Standard Residue								
At weekends	No.	1.80	0.53	-0.77	-0.95	-0.28		
Monthly	No.	-0.63	0.27	0.74	-0.61	-0.40		
Once every 3 months	No.	0.37	-0.99	0.64	-0.11	3.27		
On vacation	No.	-0.37	0.22	-0.34	0.46	-1.22		
Chi-Square Calculated =	20.91*	Critical value (theoretical)=				18.55	p > 0.1(*)	
Degrees of freedom (df) =	12					21.03	p > 0.05(**)	
Cramer's V =	0.26	Pearson's C =				26.22	p > 0.01(***)	
						0.41		

Source: Data processing from the questionnaire.

**Tourists' opinion on the main asset of the Danube Delta's reservation depending on their age.**

From the point of view of the tourists who participated at this questionnaire, 61% of

them consider that the main asset of the Danube Delta reservation is the possibility to participate in various activities and fishing.

Table 5. Structure of tourists' opinion on the main asset of the Danube Delta reservation depending on their age

What is the main asset of an agritouristic pension in the Danube Delta natural reserve?								
The tourist's age								
Age	U.M.	Traditional cuisine of Lipova	Accommodation conditions offered	Participating in various activities and fishing	I do not know / I was not	Total		
		No.	No.	No.	No.	No.	%	
18 – 25 years	No.	1	0	6	2	9	9%	
26 – 40 years	No.	4	1	21	12	38	38%	
41 – 60 years	No.	8	1	27	6	42	42%	
> 60 years	No.	1	2	8	1	12	12%	
Total	No.	14	4	62	21	101	-	
	%	14%	4%	61%	21%	-	100%	
Standard Residue								
18 – 25 years	No.	-0.22	-0.60	0.20	0.09			
26 – 40 years	No.	-0.55	-0.41	-0.48	1.46			
41 – 60 years	No.	0.90	-0.51	0.24	-0.92			
> 60 years	No.	-0.51	2.21	0.23	-0.95			
Chi-Square Calculated =	11.39	Critical value (theoretical)=				14.68	p > 0.1(*)	
Degrees of freedom (df) =	9					16.92	p > 0.05(**)	
Cramer's V =	0.19	Pearson's C =				21.67	p > 0.01(***)	
						0.32		

Source: Data processing from the questionnaire.

Also, 14% of tourists consider the main advantage, the traditional Lipova cuisine and 4% consider that the accommodation conditions offered by the accommodation units in this region are an important advantage of the reservation (Table 5).

Tourists aged between 41 and 60 think most of them, accounting for about 27% of all interviewed, that the main asset of this area is the possibility of participating in various activities and fishing. Similarly, there are tourists aged between 26 and 40, but which

account for less than 20% of the total number of tourists surveyed (Table 5).

**Tourists' opinion on the main asset of the Danube Delta's reservation depending on how they get used to go on holidays.**

Tourists who choose to spend their holidays with friends are of the opinion in the

proportion of over 32% of all interviewed, that the main advantage of this area is the possibility of participation in various fishing activities. Similarly, there are tourists who choose to go on family vacations and represent 18% of the total respondents (Table 6).

Table 6. Structure of tourists' opinion on the main asset of the Danube Delta reservation depending on how they get used to go holiday

What is the main asset of an agritouristic pension in the Danube Delta natural reserve?							
The way the tourist likes to go on vacation							
Specification	U.M.	Traditional cuisine of Lipova	Accommodation conditions offered	Participating in various activities and fishing	I do not know / I was not	Total	
		No.	No.	No.	No.	No.	%
With friends	No.	6	1	33	6	46	46%
In the couple	No.	2	1	10	3	16	16%
In family	No.	6	2	19	12	39	39%
Total	No.	14	4	62	21	101	-
	%	14%	4%	61%	21%	-	100%
Standard Residue							
With friends	No.	-0.15	-0.61	0.90	-1.15		
In the couple	No.	-0.15	0.46	0.06	-0.18		
In family	No.	0.26	0.37	-1.01	1.37		
Chi-Square Calculated =	5.88	Critical value (theoretical)=			10.64	p > 0.1(*)	
Degrees of freedom (df) =	9				12.59	p > 0.05(**)	
Cramer's V =	0.17	Pearson's C =			16.81	p > 0.01(***)	
					0.23		

Source: Data processing from the questionnaire.

**Tourists' opinion on the main asset of the Danube Delta's reservation depending on the frequency of holidays.**

By statistically testing the opinion of the tourists (Chi-Square = 21.05 \*\* Critical Value = 16.92 at a probability of p > 0.05), regarding the main advantage of the Danube Delta

reservation according to the frequency of holidays, it is noted that there is a significant association between the opinion tourists on the main asset of the Danube Delta reservation and the frequency of holidays on the analysed problem.

Table 7. Structure of tourists' opinion on the main asset of the Danube Delta reservation depending on the frequency of holidays

What is the main asset of an agritouristic pension in the Danube Delta natural reserve?							
After holiday frequencies							
Specification	U.M.	Traditional cuisine of Lipova	Accommodation conditions offered	Participating in various activities and fishing	I do not know / I was not	Total	
		No.	No.	No.	No.	No.	%
At weekends	No.	1	1	0	2	4	4%
Monthly	No.	1	0	4	3	8	8%
Once every 3 months	No.	3	1	4	6	14	14%
On vacation	No.	9	2	54	10	75	74%
Total	No.	14	4	62	21	101	-
	%	14%	4%	61%	21%	-	100%
Standard Residue							
At weekends	No.	0.60	2.11	-1.57	1.28		
Monthly	No.	-0.10	-0.56	-0.41	1.04		
Once every 3 months	No.	0.76	0.60	-1.57	1.81		
On vacation	No.	-0.43	-0.56	1.17	-1.42		
Chi-Square Calculated =	21.05**	Critical value (theoretical)=			14.68	p > 0.1(*)	
Degrees of freedom (df) =	9				16.92	p > 0.05(***)	
Cramer's V =	0.26	Pearson's C =			21.67	p > 0.01(***)	
					0.42		

Source: Data processing from the questionnaire.

From the analysis of R (Standardized Residue), there are significant differences

regarding tourists who consider that the main asset of the Danube Delta reservation is the

accommodation conditions offered and those which leaves on holiday every weekend, allowing us to conclude that the opinion of tourists about the main asset of the Danube Delta reservation is influenced by the frequency of holidays (Table 7).

**Tourists' opinion on the main asset of the Danube Delta's reservation depending on the budget allocated for holidays.**

Among the tourists who allocate on average, for a holiday, a budget of 501 to 1,500 lei, are of the opinion of over 40.59% of the total of the interviewed, that the main advantage of this area is the possibility of participation in various activities and fishing, and 6.93% particularly appreciate the traditional cuisine of Lipova (Table 8).

Table 8. Structure of the opinion of the tourists regarding the main asset of the Danube Delta reservation depending on the budget allocated for the holiday

What is the main asset of an agritouristic pension in the Danube Delta natural reserve?							
After the budget allocated to the holiday							
Allocated budget	U.M.	Traditional cuisine of Lipova	Accommodation conditions offered	Participating in various activities and fishing	I do not know / I was not	Total	
		No.	No.	No.	No.	No.	%
< 500 lei	No.	5	0	9	8	22	22%
501 – 1,500 lei	No.	7	3	41	10	61	60%
> 1,500 lei	No.	2	1	12	3	18	18%
Total	No.	14	4	62	21	101	-
	%	14%	4%	61%	21%	-	100%
Standard Residue							
< 500 lei	No.	1.12	-0.93	-1.23	1.60		
501 – 1,500 lei	No.	-0.50	0.38	0.58	-0.75		
> 1,500 lei	No.	-0.31	0.34	0.29	-0.38		
Chi-Square Calculated =	7.93	Critical value (theoretical)=			10.64	p > 0.1(*)	
Degrees of freedom (df) =	6				12.59	p > 0.05(**)	
Cramer's V =	0.20				16.81	p > 0.01(***)	
		Pearson's C =			0.27		

Source: Data processing from the questionnaire

**CONCLUSIONS**

The most important conclusions that come out of the questionnaire survey applied to the tourists who visited the Danube Delta are:

- 41.58% of respondents interviewed were 41-60 years of age, followed by those aged between 26 and 40, with a 37.62% share and the opposite those aged over 60 (11.88%) and those aged 18-25 (8.91%);
- the tourists' opinion regarding the investments that should be made for the development of this area, 55% think that investments in road infrastructure should be made, 23% in actions to promote and disseminate the tourist potential of this area, 15% consider that there is a need for investment in utility infrastructure and 5% of them consider the number of tourist units to be insufficient;
- from the point of view of the tourists who participated in this questionnaire, 61% of

them consider that the main asset of the Danube Delta reservation is the possibility of participation in various activities and fishing. Also, 14% of tourists consider the main advantage in the traditional Lipova cuisine and 4% consider that the accommodation conditions offered by the accommodation units in this region are an important asset of the reservation.

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