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Study on Small and Medium-Sized Boats with Ecological Propulsion Systems in Danube Delta Area

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Abstract: The small and medium-sized boats manufacturing industry is developing, being an area in which the finished product results after a lot of work and involvement. The production capacity varies depending on the type, destination and size of the ship and the number of units sold varies from one year to another, identifying an increase in demand in the last 2 years. From a geographical point of view, it can be said that the Danube Delta area is practically a concentrated node of development of this industry. The paper presents some aspects of developing a business in the field of production and services for small and medium-sized boats with ecological propulsion systems.

Keywords: boats; ecological systems; Danube Delta; business plan

1. Introduction

Danube Delta is the youngest geographical region in Romania, located in the NW part of the Black Sea basin, figure 1. In addition to many other monuments and locations in Romania, the Danube Delta is on the UNESCO world heritage list, thus being an objective with a special importance³.

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³ Danube Delta (Delta Dunării). *Web page.* https://ro.wikipedia.org/wiki/Delta_Dun%C4%83rii.



Figure 1. Location of Danube Delta

Source: https://ro.wikipedia.org/wiki/Delta_Dun%C4%83rii

What is really impressive in the Danube Delta is its aquatic fauna, which manages to attract every year a large number of tourists eager to discover its beauties¹.

The peculiarities of the natural setting of delta generated forms of tourism specific only to this area².

Thus, as the material base of delta tourism developed, the main tourist motivations that determined the movement of tourists to this area were³: knowledge of an original natural framework with a unique character in the world; spending complex sea-delta resorts; the practice of water sports in special conditions of delta, as well as the practice of fishing and sport hunting, within the limits provided by law.

Regarding the access and movement of ships and boats on the inland canals and lakes within the perimeter of the Danube Delta Biosphere Reserve, Romanian Government has implemented several rules published in the Official Gazette in 2015, by decision no. 538/2015⁴.

These are²: the management of ships and boats is done only by the persons holding the attestation documents provided by legislation in force for each type of ship or boat; ships and boats sailing within the perimeter of the Danube Delta Biosphere

¹ Danube Delta (Delta Dunării). *Web page*. <https://www.reginadeltei.ro/delta-dunarii/>.

² Tourist potential and tourist structures in the Danube Delta (Potențialul turistic și structuri turistice în Delta Dunării). *Web page*. Retrieved from <https://www.creeaza.com/afaceri/turism/Potențialul-turistic-si-struct753.php>, date: 20.07.2021.

³ Tourism in Danube Delta (Turismul în Delta Dunării). *Web page*. <https://pdfcoffee.com/turismul-in-delta-dunarii-pdf-free.html>, date: 21.06.2021.

⁴ Decision for the approval of the Rules regarding the access and circulation of ships and boats on the inland canals and lakes within the perimeter of the “Danube Delta” Biosphere Reserve (Hotărâre pentru aprobarea Regulilor privind accesul și circulația navelor și ambarcațiunilor pe canalele și lacurile interioare din perimetrul Rezervației Biosferei “Delta Dunării”). *Web page*. Retrieved from http://www.mmediu.ro/uploads/files/2014-10-01_HG.pdf, date: 21.07.2021.

Reserve must be equipped with electronic devices and monitoring systems, established by the Danube Delta Biosphere Reserve Administration; the maximum permissible speed of ships and boats navigating on traffic channels and inland lakes within the perimeter of the reservation is 15 km/h and 40 km/h and must be equipped with life jackets for all persons on board; it is forbidden to navigate during the night of ships and boats that are not signalized according to the legal provisions in force, etc.

Danube Delta Tourist Management Association presented on January 23, 2020 its activity balance for 2019, at the General Assembly of Members^{1,2}.

The tourist promotion of the Delta has led to a significant increase of tourists number, registering progress between 2 and 20% in 2019 compared to previous years, figure 2.

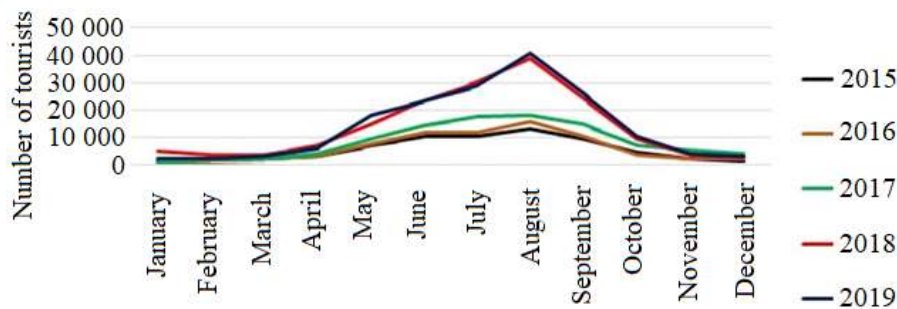


Figure 2. Increasing the Number of Tourists between 2015-2019 Presented on January 23, 2020 by the Management Association of Danube Delta Tourist Destination

Source: <https://agro-tv.ro/delta-dunarii-o-destinatia-la-mare-cautare-printre-turistii-romani-si-straini/>

Thus, the number of tourists in the destination remained on the same increasing trend, registering a presence of tourists by about 2% higher, given that in 2018 the tourist activity had an increase of 67% compared to previous year⁴.

However, there has been a significant decrease in the number of foreign tourists, a context in which without adequate measures to improve the quality of tourist services

¹ White balance: The number of tourists in the Danube Delta also increased in 2019 (Bilanț la alb: Numărul turiștilor din Delta Dunării a crescut și în 2019). *Web page*. Retrieved from <https://infotulcea.ro/bilant-la-alb-numarul-turistilor-din-delta-dunarii-a-crescut-si-in-2019/>, date: 23.07.2021.

² Danube Delta, a popular destination for romanian and foreign tourists (Delta Dunării, o destinație la mare căutare pentru turiștii români și străini). *Web page*. Retrieved from <https://agro-tv.ro/delta-dunarii-o-destinatia-la-mare-cautare-printre-turistii-romani-si-straini/>, date: 19.07.2021.

and without a study on tourism support capacity in the Danube Delta, no consistent action can be taken to ensure a tourism with a predictable character⁴, figure 3.

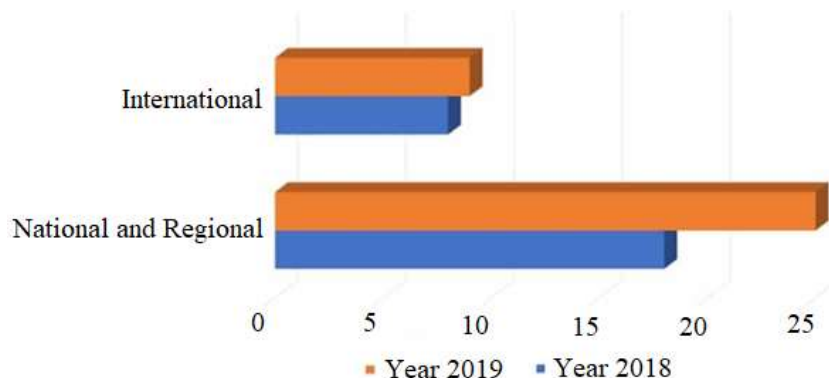


Figure 3. Promotion Actions with National, Regional and International Impact

Source: <https://agro-tv.ro/delta-dunarii-o-destinatia-la-mare-cautare-printre-turistii-romani-si-straini/>

Therefore, the Association will continue in the coming years to carry out unitary tourism promotion activities of the Danube Delta and Tulcea County as a tourist destination, actively contributing to the development and promotion of the entire county, in this area being necessary, perhaps more than in other destinations, a responsible tourism, a visiting tourism, slow, in balance with biodiversity¹.

It is well known that shipping is cheaper compared to other modes of transport, offering safety to the beneficiaries. Also, in the Danube Delta area, the geographical environment favors and in some places even imposes this transport variant.

Therefore, following the growth of tourism in this area, the small and medium-sized boats industry is developing, being an area where the finished product results after a lot of work and involvement.

The production capacity varies depending on the type, destination and size of the ship, and the number of units sold varies from year to year, identifying an increase in demand in the last 2 years. From a geographical point of view, it can be said that the Danube Delta area is practically a concentrated node of development of this industry.

¹ Danube Delta, a popular destination for romanian and foreign tourists (Delta Dunării, o destinație la mare căutare pentru turiștii români și străini). *Web page*. Retrieved from <https://agro-tv.ro/delta-dunarii-o-destinatia-la-mare-cautare-printre-turistii-romani-si-straini/>, date: 19.07.2021.

Depending on the certificate of the navigation area, the boats are classified into several categories¹: class A: recreational boats on inland waters and in maritime areas; class B: recreational boats in maritime areas which not exceeding a maximum distance of 12 MM (nautical miles) from the coast; class C: recreational boats in maritime areas which not exceeding a maximum distance of 6 MM from the coast; class D: recreational boats on inland waters.

2. Business Plan

2.1. Business Description

The paper proposes the realization of a business plan, which consists in setting up a company, called MyBOATS. The form of the company is new limited liability company (SRL-D).

The company's location is in Tulcea, in the Mahmudia Barrier area. The space has an area of 500 square meters that includes two production halls, offices and bathrooms. To these is added the outdoor space where heavy vehicles can enter.

The company's objective is to develop and diversify the services intended for potential owners of fishing, technical and leisure boats, as well as to increase the company's rentability and profitability by improving the quality of services offered to potential customers.

It is considered that the business is opportune on the market in Tulcea, in the context in which the city is a way to enter an area with tourist and economic potential.

The activity domain in which this business is started is materialized through a complete range of services in the nautical field, such as: consultancy in choosing the boat that best suits the client's wishes; assembly and installation of the engine and specific equipment; reinforcement of boats; polish and cosmetics; transport and launch; service during the warranty and post-warranty period of the boats, as well as locking and storage services inside the headquarters and in Danube Delta.

The products offered by MyBOATS include fishing and recreation boats, pedal boats and, on request, special small boats with functions and propulsion technologies adapted to the requirements of the shipowner, figure 4.

¹ Boat (Ambarcațiune). *Web page*. Retrieved from <https://ro.wikipedia.org/wiki/Ambarca%C8%9Biune>. date: 19.07.2021.



Figure 4. Types of Products Offered by MyBOATS

In the future, it is desired to bring to market ecological propulsion and power supply systems, through an installation adjacent to a main solar panel, figure 5.



Figure 5. Solar Powered System Model

Source: <https://catamaranguru.com/sunwave-54-solar-catamaran/>

Through its services, the company addresses and wants to capture a wide audience, relying on competitive prices and affordable to all beneficiaries.

Potential customers are mainly boarding house administrators in Danube Delta, who also provide tourist transport services. For them, special offers are available for the

purchase of several products, on order. The company also addresses all those who are passionate about the unique beauty of the Delta, through its flora, fauna and landscapes, who want to visit those places, possibly to establish a floating residence there.

Another market segment is represented by those who deal with family or commercial fishing and require the products offered by MyBOATS.

The entire industry is developing so that in recent years other companies have emerged that offer similar products and services. Thus, there is an increase in the market that implies an increased demand and the need to evolve from all points of view of the offered products and services.

Thus, all the other companies in the naval industry that produce small boats and provide services in this field, carrying out their activity in the city of Tulcea or in the surroundings and having as potential customers the same market segment, were identified as competitors, figure 6.

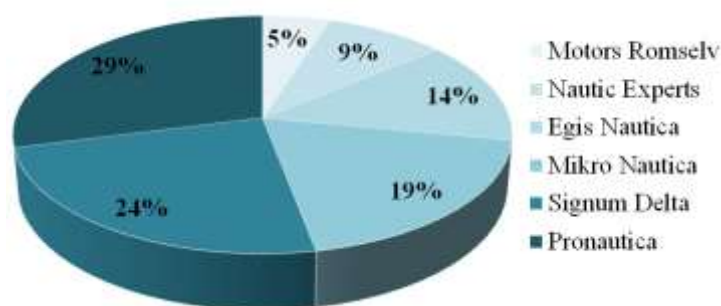


Figure 6. The Main Competitors of MyBOATS

Most of these companies offer a wide range of services, but the only one that stands out and is a great competitor is ProNautica, through experience and continuous development in several locations.

In general, a company is successful if the brand it promotes in the market is known to the entire target audience. At the moment, there is no company that has an absolute monopoly in the field, the production being segmented on all existing companies. The success of competitors is ensured, practically, by maintaining the services at a medium, constant level, which gives security to the buyers, but does not promote the idea of new, innovation and revolution, which wants to bring to market the MyBOATS company.

The company aims to lay the foundations of the business by developing a marketing strategy conducive to a sustainable development. The strategy with which it enters the market pursues innovation, in line with the quality of the products. The marketing plan includes the development of an online platform in which each product is present in detail. The product catalog will include the main dimensions of the boat, technical specifications, as well as functional characteristics. There will also be a comments and reviews section to keep a direct and open connection with customers.

Key and storage services are also provided inside the headquarters and in the Danube Delta, encouraging young investors to purchase a boat from the earliest stage of development. The price at which it will enter the market will be competitive, for the formation of the target market. It will vary depending on the materials from which the boat is produced, as well as the additional equipment and endowments related to the requirements of the buyers. As an estimated price, such a product (the boat) sells for around 1200 Euros but, depending on its complexity and functionality, it can increase significantly. The promotion will also be done through classic methods, to cover a wide range of potential customers. In this sense, ads will be published in the Delta newspaper, the most popular newspaper in the county and will be invested in commercials on the Delta Radio channel. At the same time, the notice area on the Danube seafront will be covered, especially in the area of the River Port.

A SWOT analysis was performed in order to identify the main advantages and disadvantages offered by both the internal and external environment. The company will choose a strategy through which to take advantage of both the company's strengths and the opportunities offered by the external environment, tabel 1.

Table 1. SWOT Analysis.

STRENGTHS	WEAKNESSES
- qualified and professional staff;	- new product, poorly known by users;
- communication with customers;	- relatively high production costs;
- speed and reliability;	- lack of an aggressive market strategy;
- competitive prices;	- limited resources.
- the image of a reliable partner;	
- integration in the current environment;	
- innovative technologies;	
- capitalize of employers ideas;	
- low resource consumption.	
OPPORTUNITIES	THREATS

-
- | | |
|--------------------------------------|--------------------------------------|
| - attracting new customers; | - unfair competition from |
| - promoting innovative | experienced entrepreneurs; |
| technologies unfamiliar to | - lack of an initial customer niche; |
| shipowners; | - launch on an as yet unknown |
| - implementation and development | market. |
| of the concept of energy efficiency. | |
-

The optimization of the business from an economic point of view will be done through the high level of staff skills, through efficient and dedicated work.

The company will try to capitalize on the idea of new products that are in line with current standards, by using environmentally friendly materials and systems that allow low total energy consumption, as well as a good integration into the current environment by meeting the requirements of each customer.

2.2. Financial Business Plan

Within the company MyBOATS there will be 2 associates, each of them coming with the amount of 5000 RON for financing and also will resort to a non-reimbursable financial aid, for the amount of 40,000 RON. The forecast of expenses is made for a period of 4 years, table 2.

The supply of raw materials will be made by a well-known supplier on the market with extensive experience in the field, eventually establishing a collaboration contract for the supply of high quality products in accordance with European standards. The equipment and devices necessary to carry out the activity is of the latest generation, offering customers finished products that stand out through quality, durability and reliability.

Salaries are calculated for 6 people: two engineers (the 2 associates) and 4 employees. For the first year, the amount of approximately 140,000 RON will result, and for the following years, an increase in salaries will be pursued depending on the profit that will be obtained.

The expenses with renting the space start from the amount of approximately 2300 RON per month and it is expected that in the next years, the monthly rent price will increase on average by 10% compared to the previous year, given that the trend of capitalization of related commercial spaces is growing. The price of utilities includes drinkable water, electricity, gas, etc.

The marketing part includes newspaper appearances and online promotion and for the repair/ maintenance part, a budget of 1000 RON is expected for the first year of activity, with an increase of 20% for the next 3 years, given that some products may show signs of wear.

Table 2. Cost

Cost	YEAR	YEAR	YEAR	YEAR
	2021	2022	2023	2024
Expenditures on raw materials/merchandise and consumables related to the activity carried out	30 922	40 198.60	52 258.18	67 935.63
Salaries (including related expenses)	138 000	144 900	159 390	175 329
Rent	27 000	29 700	32 400	35 100
Utilities	7 579.76	7 807.15	8 041.37	8 282.61
Office running costs	1 000	1 000	900	900
Marketing expenses	252	252	252	252
Repairs/Maintenance	1 000	1 200	1 440	1 728
Expenses related to travel to fairs and participation fees	2 000	2 000	2 000	2 000
TOTAL COST [RON]	207 753.76	227 057.75	256 681.55	291 527.24

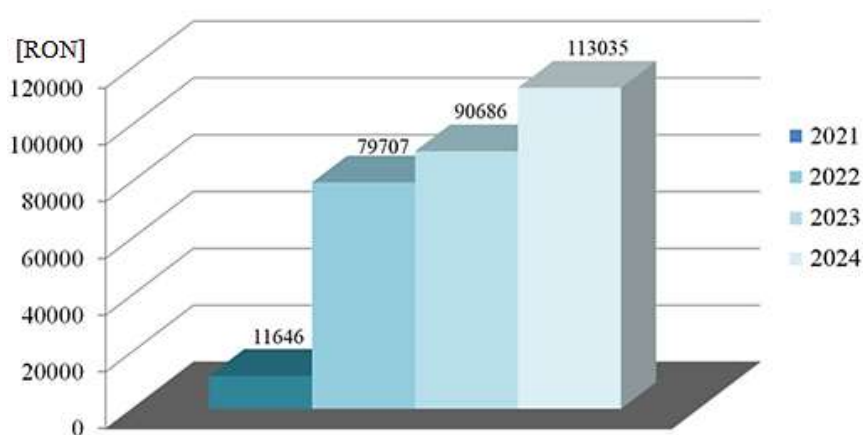
A continuous development is pursued, so that it will participate in promotion fairs in which the new products will be presented, and in this sense an amount of 2000 RON is annually allocated.

The sales forecast is the starting point in estimating future funding needs, so an increase in total sales is expected from one year to the next, tables 3. The sales prices of the products have been established, for each year, by reference to boats already on the market.

Table 3. Sales

No. Sales	AN 2021	AN 2022	AN 2023	AN 2024
1 Fiberglass fishing boat	12	14	14	15
Sale price/piece	4 900	5 445	5 989	6 588
TOTAL	58 800	76 230	83 846	98 820
2 Recreation boat	9	11	11	12
Sale price/piece	7 500	8 415	9 256	10 182
TOTAL	67 500	92 565	101 816	122 184
3 Fishing boats	11	14	14	15
Sale price/piece	4 500	5 175	5 850	6 525
TOTAL	49 500	72 450	81 900	97 875
4 Pedal boat	6	8	9	9
Sale price/piece	5 400	5 940	6 534	7 187
TOTAL	32 400	47 520	58 806	64 683
5 Boat cosmetics	14	20	21	21
Sale price/piece	800	900	1 000	1 000
TOTAL	11 200	18 000	21 000	21 000
TOTAL SALES [RON]	219 400	306 765	347 368	404 562

Regarding the profit obtained, figure 7, meaning the difference which remains from sales after deducting all cost during the calculation period, a significant increase in profit can be observed from one year to another, which means that the business is considered to be a successful investment and a solution for the future given the growing market demand for the boats industry.

**Figure 7. Profit**

4. Conclusions

In conclusion, given the fact that the small and medium-sized boats industry is booming in terms of the development of river and coastal maritime transport, as well as the development of tourism in the Danube Delta area, the emergence of entrepreneurship in this market segment is increasingly more significantly, the financial model of this paper indicating the potential of such a business.

5. Acknowledgement

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References

- Boat (Ambarcațiune). *Web page*. <https://ro.wikipedia.org/wiki/Ambarca%C8%9Biune>.
- Danube Delta (Delta Dunării). *Web page*. https://ro.wikipedia.org/wiki/Delta_Dun%C4%83rii.
- Danube Delta (Delta Dunării). *Web page*. <https://www.reginadeltei.ro/delta-dunarii>.
- Danube Delta, a popular destination for romanian and foreign tourists (Delta Dunării, o destinație la mare căutare pentru turiștii români și străini). *Web page*. <https://agro-tv.ro/delta-dunarii-o-destinatie-la-mare-cautare-printre-turistii-romani-si-straini>.
- Decision for the approval of the Rules regarding the access and circulation of ships and boats on the inland canals and lakes within the perimeter of the “Danube Delta” Biosphere Reserve (Hotărâre pentru aprobarea Regulilor privind accesul și circulația navelor și ambarcațiunilor pe canalele și lacurile interioare din perimetrul Rezervației Biosferei “Delta Dunării”). *Web page*. http://www.mmediu.ro/uploads/files/2014-10-01_HG.pdf.
- Tourism in Danube Delta (Turismul în Delta Dunării). *Web page*. <https://pdfcoffee.com/turismul-in-delta-dunarii-pdf-free.html>.
- Tourist potential and tourist structures in the Danube Delta (Potențialul turistic și structuri turistice în Delta Dunării). *Web page*. <https://www.creeaza.com/afaceri/turism/Potențialul-turistic-si-struct753.php>.
- White balance: The number of tourists in the Danube Delta also increased in 2019 (Bilanț la alb: Numărul turiștilor din Delta Dunării a crescut și în 2019). *Web page*. <https://infotulcea.ro/bilant-la-alb-numarul-turistilor-din-delta-dunarii-a-crescut-si-in-2019>.